Women in Politics: The Effect on Board Diversity

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Abstract

We use a sharp regression discontinuity design (RDD) to show that victories by women candidates in close House, Senate, and gubernatorial elections lead to an increase in female directors in firms located in the candidates' districts. The causal effect is higher when the media coverage of the woman candidate is higher, when voter turnout is high, and when firms have more local directors and local institutional investors. The heterogeneous regression discontinuity (RD) effects suggest that electoral wins may influence local gender norms and firms' board diversity through multiple channels, including conveying majority views on gender-related social norms, increasing exposure to exemplar women, and facilitating learning about women's different but effective leadership styles. The evidence suggests a potential spillover effect from women's political leadership to the corporate world.

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1. Introduction

There have been significant regulatory initiatives to increase gender diversity on corporate boards in many countries over the past two decades. In the United States, pressure on firms to appoint women directors increased with the passage of a 2018 California law requiring female representation on boards, which has subsequently been repealed. Recent years have also seen institutional investors actively advocate for gender diversity on corporate boards. These mechanisms use regulatory mandates and external pressure to bring about changes in firm policies. In this paper, we examine a hitherto unexplored channel that does not rely on regulatory mandates and that links the large literature on female political representation with board gender diversity. Specifically, we examine the spillover effect from women's political leadership to women's representation on corporate boards.

Women's political leadership has been shown to impact voters' gender attitudes. Women political candidates serve as role models for other women and are associated with more girls indicating an intention to be politically active (Campbell and Wolbrecht (2006)). In addition, female political leadership has been associated with a change in voter attitudes towards women (Beaman, Chattopadhyay, Duflo, Pande, and Topalova (2009)). Though women's political leadership has been shown to impact voters' gender attitudes, there is little understanding, as yet, of whether these changes have spillover effects outside political behavior, particularly in the corporate world.

A study of the effect of women's political leadership on women's corporate leadership (as proxied by appointments to corporate boards) is difficult due to the underlying endogeneity. Women's leadership in the political world is not random, and underlying omitted factors, such as a region's prevailing gender norms, are likely to influence the importance of women in both the

political and corporate worlds. To address this endogeneity, we examine close elections (i.e., elections decided by a narrow margin) involving women and implement a regression discontinuity (RD) estimation. Districts where women narrowly win or narrowly lose are likely to have similar attributes, including underlying gender norms, so any effect on subsequent board gender diversity is likely to be due to the treatment effect of women candidates winning the election.

We begin by examining whether electoral wins by women candidates in close elections lead to an increase in the number of women directors in firms located in the same districts. We examine House, Senate, and gubernatorial elections where a non-incumbent woman candidate runs against a male candidate over the period 2004 to 2016. This results in a sample of 365 elections. For each election, we calculate the *Woman Win Margin*—the difference in the fraction of votes obtained by the woman candidate minus the fraction obtained by the male candidate—which ranges from minus one to plus one. The treatment variable, *Woman Win*, takes the value of one when the *Woman Win Margin* is greater than zero. Consistent with the RD's identifying assumption, we find that narrow wins and narrow losses by women candidates are locally random, as shown by the continuity of the forcing variable at the cutoff and an insignificant McCrary (2008) density test.

We obtain board data for S&P 1500 firms headquartered in the zip codes spanned by our election sample, and examine the change in the number of women directors in the year after the election. We control for firm characteristics, especially the lagged number of women directors, along with county demographic characteristics. In our sample of close elections, an OLS estimation shows a significant increase in female directors in the years after election wins by women candidates. These results hold in an RD estimation. To ensure the validity of the RD design, we check for, and find no, discontinuities in the covariates around the cutoff point. Our

base RD specification, which is a local linear regression function with a triangular kernel and an optimally determined bandwidth, shows that women's election wins have a significant causal effect on the increase in the number of women directors for firms headquartered in those zip codes. We estimate and report specifications with different bandwidths, polynomials of varying order, and different kernels and find qualitatively similar results.

Imbens and Lemiuex (2008) and Catttaneo, Idroba, and Titunik (2019) recommend falsification tests to check the validity of the RD design. In line with that, we 1) implement placebo outcomes around arbitrary chosen cutoffs for winning and 2) examine the change in the number of women directors in the year *prior to* women's election wins. We find no evidence of an increase in female directors either after the placebo wins by women candidates or for firms in districts where there is a subsequent electoral win by a woman candidate. These results mitigate concerns that districts' underlying characteristics cause both electoral wins by women candidates and increases in women directors. The results also allay concerns about reverse causality.

Several non-mutually exclusive mechanisms may account for the effect of women candidates' electoral wins on board diversity. First, elections convey information about the electorate's consensus views. Stangor, Sechrist, and Jost (2001) find that stereotypes and prejudices are likely to change if participants are informed that the consensus view is different from their own, and that this change in belief persists over time. The change arises because the relevance of stereotypic beliefs lies in the individual's perception that those beliefs are shared by others. Lowery, Hardin, and Sinclair (2001) propose a "social tuning" hypothesis where shared reality—that is, the sense that social beliefs are shared—is thought to establish and maintain social bonds and causes individuals to adjust or attune their beliefs to others. Women candidates' election wins convey, to the citizens, the fact that the majority supports women leadership, which may

influence others to move towards the perceived consensus or mainstream view. Second, election wins by women expose the citizens to exemplar women, and this exposure to counter-stereotypic group members may change the citizens' beliefs (Dasgupta and Greenwald (2001)). Thirdly, Appelbaum, Audet, and Miller (2003) point out that women's leadership style differs from men's. If this is the case, then electoral wins by women candidates may result in increased exposure to and acceptance of women's leadership styles. Whether by aggregating and conveying the majority views or by exposing citizens to exemplar women or differing leadership styles, all three mechanisms imply a change in local gender-related norms and a resulting increase in board gender diversity after women candidates' election wins.

To provide empirical support for the proposed mechanisms, we study instances when the underlying mechanism leads to disparate treatment effects. First, we examine election characteristics that increase the effect of the election and the salience of gender on social norms. We show that wins by woman candidates in more consequential (i.e., Senate and gubernatorial but not House) elections, elections when the woman candidate's media coverage is high, and elections when her base is more energized all result in larger treatment effects. Second, we identify firm characteristics that make the firm more responsive to local changes in gender norms. Firms in which a higher fraction of the board lives locally and firms where local institutions hold a higher fraction of shares are likely to be more responsive to changes in local norms. Consistent with this, we find larger treatment effects for such firms. We also find that boards where directors have negative ISS recommendations, which results in greater pressure from shareholders, are more responsive to wins by women candidates.

As the treatments effects are confined to election wins by non-incumbent visible women candidates and do not extend to wins by incumbent women candidates and those with low

visibility, the results are unlikely to be due to anticipation of female friendly regulation and policies which should arise from all women wins (see Brogaard, Gerasimova and Rohrer (2024)). We also examine and find no connections between the winning women candidates and the newly appointed female directors; this mitigates the concern that the new director appointments reflect political connections.

The RD design allows us to estimate the causal effect of electoral wins by women candidates on board gender diversity. The estimated coefficient implies that the increase in the number of women directors following close electoral wins by women candidates is three times higher than the unconditional increase. As the RD estimate is locally estimated, its effects cannot be extrapolated to the whole sample. However, the results show a continued significance of the RD treatment effect at larger bandwidths, as well as when the effect is estimated in the whole sample. As these results do not rely on close elections, they suggest that the RD estimate is relevant for overall firm behavior and policy decisions.

The paper is among the first to link the large literature on female political representation and its impact on voter attitudes with the rapidly growing literature on board gender diversity. The paper finds significant spillovers of female political leadership into the corporate world, which manifest in greater gender diversity on boards. While there is a growing literature on the role of social norms on firm policies, few studies examine the mechanisms that change underlying social norms. Along with Duchin, Simutin, and Sosyura (2021), who examine early childhood exposure to gender norms and its effect on CEOs' gender attitudes, this paper documents the role of women candidates' electoral wins in changing underlying gender norms and board gender diversity.

Gender diversity on corporate boards has received academic as well as regulatory attention over the past two decades. Though the number of women directors has increased in recent decades,

barriers to women still arise from "discrimination and culture" (Adams and Kirchmaier (2015))). Our results suggest a potential way to address concerns about gender diversity on boards.

The rest of the paper is organized as follows. In Section 2, we briefly discuss the related literature. In Section 3, we discuss the data. Section 4 details the empirical implementation and robustness checks, and Section 5 discusses heterogenous RD effects. Section 6 concludes.

2. Literature Review

Several studies have examined the effect of female political candidates on voters' gender attitudes. In addition to Campbell and Wolbrecht's (2006) findings (discussed earlier), Atkeson (2003) documents that the presence of competitive female political candidates is associated with a greater likelihood of political engagement by female citizens, and that this effect is immediate. Along with being effective role models, female political leaders are associated with changes in voter attitudes towards women. Beaman, Chattopadhyay, Duflo, Pande, and Topalova (2009) find that gender mandates in India change voter preferences, and that in areas where female leaders are elected by mandate, women are more likely to run for office and get elected. Baskaran and Hessami (2018) document that female candidates for lower office in Germany are more successful if females also occupy higher positions. This electoral gain for women is due to a reduction in voters' anti-female biases that arises from females occupying higher office.

Though women political candidates have been shown to change voters' gender attitudes, no study has examined whether these changes spill over from the political sphere into the corporate world. There are several channels through which election outcomes could impact broader social norms that effect corporate decisions.

First, electoral wins convey information about mainstream views to the citizenry. We therefore draw on the literature that examines the malleability of stereotypes and prejudices and

how they respond to social and contextual influences (see Blair (2002) for a review). In particular, Stangor, Sechrist, and Jost (2001) find that stereotypes can be changed when people receive consensus information that goes against the stereotype they hold. In that study, a group of European American students answering a question on the positive and negative traits of African Americans become more favorable in their assessments when they are provided with the consensus feedback that others are being more favorable. On the other hand, when the consensus view endorses the stereotypes, these beliefs become more resistant to change. Further, Stangor, Sechrist, and Jost (2001) find that the change in beliefs persists over time.

Lowery, Hardin, and Sinclair (2001) argue that by adjusting their perspectives to the attitudes of others, individuals achieve the common ground that is necessary to sustain social interaction. Specifically, the authors find that participants exhibit less negativity towards Blacks when in the presence of a Black experimenter. Electoral wins facilitate a clear communication of the majority's attitudes, which may lead individuals to change their own attitudes to be more in tune with the mainstream.[1]

In line with this proposed effect of election outcomes on social norms, several studies document the effect of Donald Trump's win in the 2016 presidential election on individual behavior. Specifically, Bursztyn, Egorov, and Florin (2020) find an increase in individuals' willingness to express xenophobic views, Huang and Low (2017) find an increase in men's aggressiveness in negotiations with women, and Edwards and Rushin (2018) document an increase in the prevalence of hate crimes.

[1] See also Zitek and Hebl (2007) and Blanchard, Crandall, Brigham, and Vaughan (1994), among others who argue that the clarity of the social norms around prejudice impacts the change in attitudes due to social influence. Electoral wins are likely to be one mechanism, among others, of establishing and communicating mainstream attitudes.

Second, Dasgupta and Greenwald (2001) propose another channel for bringing about a change in attitudes. They show that when participants are immersed in situations that frequently expose them to admirable members of stigmatized groups and to disliked members of valued groups, the participants' beliefs shift in important ways. Notably, Dasgupta and Greenwald (2001) find that participants who are exposed to admired Black Americans display less prejudice.[2] This exposure-to-exemplars hypothesis implies that victories by women candidates showcase exceptional women and thus make attitudes towards all women more favorable. Consistent with the notion that election wins highlight exemplars, Plant et. al. (2009) document a reduction in anti-Black prejudices after Barack Obama's victory.[3]

Along with conveying information about mainstream beliefs and generating awareness of exemplar women, women's election wins may affect corporate boards via a third channel: an increase in citizens' exposure to women's leadership style. Appelbaum, Audet, and Miller (2003) point out that women's leadership style differs from men's, and though both styles can be effective, socialization is likely to lead to a persistent perception that the women's style is less effective.[4] Winning women candidates may help change that attitude. They allow the electorate to see that while women's leadership styles are different, women can still be effective and win, thus facilitating more leadership by women in the corporate world.

These studies together underscore the importance of election wins in changing social attitudes. Women in close elections against men are likely to bring attention to gender issues,

[2] Dasgupta and Greenwald (2001) find that participants that have explicit attitudes towards a group do not change their views and are more likely to treat the "exemplar" as an exception to the rule.

[3] The evidence on change in racial attitudes after Barack Obama's win is mixed. Some studies, like Schmidt and Nosek (2009), find no change in attitudes. Though the "exemplar" hypothesis does not require an election win, winning solidifies the candidate's exemplar status. An exemplar woman that loses an election is likely to have her image tarnished, on average.

[4] Appelbaum, Audet, and Miller (2003) argue that whereas men see leadership as leading and transactional, women see it as facilitating and transformational. Also, see Eagly and Johannesen-Schmidt (2001) for a theoretical rationale, based on social role theory, for the differences between male and female leadership.

though it is their *winning* that is likely to significantly impact gender-related attitudes. A woman's loss in a close election reaffirms gender stereotypes rather than encouraging a reevaluation of these norms. Andreoni and Bernheim (2009) point out that "the norm of 50-50 appears to have considerable force in a wide range of economic environments."[5] This points to a tipping point at the 50-50 norm and predicts that a woman candidate's win, even with a small margin (say 51%), is likely to have a significant effect on subsequent gender-related norms, relative to a loss with a small margin (say 49% support). We perform placebo tests at random cutoffs for winning and find no effect on board diversity around these cutoffs. These results emphasize the significance of the 50-50 cutoff.

The paper is also related to the large and growing literature on board gender diversity. Norway mandated a 40% representation for women directors in 2004, and several countries have mandated hard or soft quotas for women directors since then (see Adams (2016) for further details). Adams and Kirchmaier (2015) examine barriers to gender diversity on boards across a sample of 22 countries and find that female labor force participation and other supply side factors are important, but they also stress that "measures of discrimination and culture" impact the career progression of qualified women (see Bertrand (2011)). Duchin, Simutin, and Sosyura (2021) document the importance of early childhood experiences in shaping gender-related norms. Our paper contributes by documenting that electoral wins by women have a causal effect in increasing the number of women directors. And while institutional investors have put greater pressure on

[5] And where issues of control are involved, the commonly seen norm is 50 plus one share. The paper cites studies on tenancy in agriculture, bequests to children, arbitration, joint ventures, and sharing of restaurant tabs among friends (among others) to motivate the wide acceptance of the 50-50 rule. Compliance with the rule has also been duplicated in the laboratory.

boards to add women directors in recent years,[6] our results, which reflect the 2004 to 2016 period, predate the increasing importance of gender diversity for these investors that was documented by Gormley et. al. (2020).

3. Data

We study the effect of elections over the period from 2004 to 2016. We end in 2016, as the period after that saw a substantial increase in institutional investors' push for board gender diversity along with the 2018 passage of the California law mandating the appointment of a woman director to each board. The period prior to these major changes is a cleaner setting in which to study the effect of electoral outcomes on board gender diversity. We examine House, Senate, and gubernatorial elections, as Campbell and Wolbrecht (2006) find that these visible and important elections get more attention. We focus on non-incumbent women candidates, as Wolbrecht and Campbell (2017) show that they are more likely to generate discussion of gender and increase gender's salience in the election.

Data for the analysis comes from multiple sources. The national election results data—U.S. House of Representatives constituency (district)-level outcomes from 2004 to 2016 and U.S. Senate state-level results from 2004 to 2016—is from Election Lab at MIT.[7] We obtain the state-level results for gubernatorial elections from Dave Leip's Atlas of US Presidential Elections. We identify the women House, Senate, and governor candidates using the data from Center for American Women and Politics (CAWP) at Rutgers University. This dataset also identifies the women candidates as challengers, incumbents, or contestants for an open seat. We include all

[6] In the 2018 proxy season, State Street and Blackrock outlined voting policies to increase board gender diversity. Pressure to increase diversity is also coming from CalSTRS, CalPERS and the California Treasurer. Proxy advisors, Glass Lewis and ISS are also issuing recommendations that take into account board gender diversity.
[7] The data are available at https://electionlab.mit.edu/data

House, Senate, and gubernatorial elections held from 2004 to 2016 where a non-incumbent woman runs against a male candidate, resulting in a final sample of 365 elections.

The board data is from the Institutional Shareholder Services (ISS) Directors database and spans 2003 to 2017. We use Compustat to obtain the zip code of each firm's headquarters and other accounting data for the firms in our sample. To match the firm-level data with the election results data, we get the congressional district to zip code matching files from the Census Bureau's website.[8] Figure 1 (Figure 1A) plots the geographic distribution of corporate headquarters for our sample of (close) elections, indicating where women candidates win or lose.

The outcome variable is the change in the number of women directors on the boards of firms with headquarters in the zip codes covered by our sample elections. Specifically, *Change in Female Directors* is the change in the number of women directors from the prior year. We indicate the year's timing relative to the election by the variable *Post*, which takes the value of one for the year after the election and zero for the year of the election. [9] The final sample consists of 2,441 firm years after elections (i.e., years where *Post* equals one). We also run placebo tests for the change in the number of women directors in the year prior to the election—that is, in years where *Post* equals zero (also referred to as *Pre Election*)—and have 2,462 firm-year observations for this sample. [10]

[8] Redistricting over the sample period changes congressional districts. Zip codes are smaller geographical units and are unlikely to span multiple congressional districts over the sample period, making them the appropriate geographical unit.

[9] For an election held in November 2012, the change in the number of female directors after the election—that is, when *Post* = 1—is the number of women directors in 2013 minus the number of women directors in 2012. Calluzzo and Kedia (2024) report that the majority of shareholder meetings happen from the last week of April to the end of May and, further, that firms on average file their proxy statement 44 days prior to the annual meetings. This suggests that the majority of firms have at least four month in which to finalize the slate of directors after the election.

[10] Of the 2,441 firm-year observations after the election, 1,989 have the woman candidate losing and 452 have the woman candidate winning. Of the 2,462 firm-year observations prior to sample elections, 2,003 are associated with the woman candidate losing and 459 with the woman candidate winning.

Table 1 presents the summary statistics for *Change in Female Directors*. On average, firms in the sample have an increase of 0.075 women directors over the sample period. There is no difference in the unconditional change in the number of women directors between firms in zip codes where women candidates win and firms in zip codes where women candidates lose. To capture the importance of women directors on the board, we also examine the change in the number of women on two important board committees: audit and compensation. The average change in the number of women on these committees is 0.068 with no significant difference between zip codes where women candidates win or lose. The patterns look similar prior to the election.

We gather data on firm characteristics that are likely to impact the number of women directors. We include the lagged number of female directors, as a greater number of existing female directors may reduce the likelihood that another female director is appointed. We obtain total assets and return on assets (ROA) to control for firm size and performance. We also consider ownership by institutional investors (IO), as it may lead to greater gender diversity on boards. Firms in zip codes where women candidates win have, on average, more existing female directors and female board committee members. There is no difference in the firm size or institutional ownership of firms in areas where women candidates win, relative to in firms where they lose. However, firms in zip codes with winning women candidates have better firm performance.

We also gather data on the demographic characteristics of the county where the firm is headquartered, including per capita personal income, total population, proportion of women, female-to-male income ratio, female and male labor force participation rates, and female and male unemployment rates.[11] Firms in zip codes where women win have lower per capita personal income, smaller populations, a slightly higher proportion of women, higher female-to-male income

[11] See Appendix A for further details on data source and variable construction.

ratio, and higher female labor force participation. Note that these are average values for the entire sample and not for the sample of close elections. Later in the paper, we test for, and find no evidence of, discontinuity in the covariates at the cutoff—that is, when the *Woman Win Margin* is zero.

4. Empirical Implementation

The forcing variable, *Woman Win Margin*, is the difference between the share of votes obtained by the woman candidate minus the share obtained by the male candidate, and takes values between -1 and 1. When values of *Woman Win Margin* are greater than zero, the women candidate wins and the indicator variable *Woman Win* takes the value of one. We begin by estimating OLS regressions in a sample of close elections followed by the RD estimation.

4.1 OLS Estimation

We first estimate an OLS model of change in the number of female directors for all firms located in zip codes where non-incumbent women run against male candidates in close elections. The main variable of interest is the interaction of *Woman Win* with *Post*, which captures the effect of a woman's election win on board diversity in the year after the election. We include industry fixed effects to control for industries that more likely to have women directors and for industries, like oil and gas, that are less likely to have them.[12] We also include year fixed effects to control for the trend of an increasing number of women directors, and cluster the errors at the state level. Panel A of Table 2 tabulates the results for the sample where the *Woman Win Margin* is within 5%. The coefficient of the interaction of *Woman Win* with *Post* is positive and significant, suggesting that firms in counties where women win close elections significantly increase their

[12] According to a 2018 ISS report, the increase in female board representation has not been uniform across all sectors. Whereas real estate and consumer staples have the highest rate of new directorships being offered to women, other sectors, like health care and financials, have relatively low levels of gender diversity.

number of female directors after the election. The results are robust to including firm and county characteristics, as discussed above, including the lagged number of female directors (Column 2). The results are qualitatively similar when we increase the sample to include all elections where women win or lose within a margin of 10% (Panel B).

For robustness, we also estimate models around arbitrary cutoffs for winning. Specifically, instead of examining close elections around the cutoff of zero, we estimate the model in samples of close elections with the winning cutoff points being -10%, + 10%, -20%, and + 20%. The variable *Woman Win Placebo* takes the value of one if *Woman Win Margin* is greater than the chosen cutoff point. As seen in Table 3, there is no significant evidence of an increase in female directors after placebo election wins by women candidates.

4.2 RD Estimation

In this section, we implement an RD design to estimate the causal effect of women's electoral wins on the number of female directors. As the assignment to the treatment group (where women candidates win) is deterministic, there is a sharp discontinuity at the cutoff off point of zero, allowing us to implement a sharp RD design.

The identifying assumption of the RD design is that districts where women candidates win or lose by a narrow margin are similar in characteristics, so any effect seen on the change in women directors can be attributed to the treatment effect of the woman candidate winning. This requires that the forcing variable, *Woman Win Margin*, be continuous around the cutoff value of zero. Figure 2 plots the histogram for *Woman Win Margin* and shows no discontinuity at the cutoff.[13] This suggests that districts where women win or lose by a small margin are comparable in voter

[13] Due to the small sample size, we used 3% bins for the histogram to increase the likelihood of having sufficient observations in each bin. With a 2% bin size, the number of observations in some bins drops, making the variance of the mean estimates in each bin high.

gender attitudes. The more formal McCrary (2008) density test, shown in Figure 3, also looks for discontinuity at the cutoff, and the estimate is small and insignificant.

We begin by estimating and reporting an OLS estimation for the full sample for the year after the election. Note that this is different from Table 2, which reports OLS results in a sample of close elections over the sample period. We include the lagged number of female directors, firm size and performance, institutional ownership, and county demographic characteristics as before. We also include industry and time fixed effects. As seen in Column 1 of Table 4, the estimated coefficient of *Woman Win* is positive but not significant.

In Column 2, we report an RD specification with a linear regression function estimated over the entire sample. The estimated coefficient for *Woman Win* is positive and significant. Columns 3 and 4 display results for the RD estimation, without and with covariates, respectively, in an optimally chosen bandwidth.[14] The estimated coefficient of *Woman Win* in Column 4 (our base specification) is positive and significant at the 1% level.

Reducing the bandwidth (Column 5) results in a higher estimated coefficient, while increasing the bandwidth (Column 6) leads to smaller estimates with the coefficient always significant at the 1% level (see Meyersson (2014) for a discussion of the relevant specifications). Using a uniform kernel (Column 7), quadratic polynomial (Column 8), or cubic polynomial (Column 9) results in positive coefficients that continue to be significant. Overall, the results show that close election wins by women candidates cause a significant increase in the number of women directors on the boards of firms headquartered in those zip codes. Figure 4 displays a graphical

[14] The optimally chosen bandwidth minimizes the mean squared error (MSE) of the local polynomial RD point estimator, given the choice of polynomial order and kernel function. A triangular kernel used in conjunction with an optimally chosen bandwidth leads to a point estimator with optimal properties (see Imbens and Kalyanaraman (2012) and Cattaneo, Idroba, and Titiunik (2019)).

illustration of the RD estimation, which shows a jump in the change in female directors at the cutoff.[15]

The estimated RD effect of 0.228 in Column 4, the base specification, suggests that the increase in the number of female directors after women candidates' electoral wins is three times higher than the unconditional increase.[16] The estimated RD effect is large, reflecting the stronger effect of close wins by women candidates. As seen later in the robustness section, the magnitude and significance of the estimated coefficients decrease as the bandwidth increases. It might seem counterintuitive that as the margin of victory for women candidates increases (larger bandwidths), the estimated coefficients drop. Note that the districts where women candidates win by large margins are likely to have pro-female gender attitudes and higher female board representation even prior to the election and, therefore, see a smaller increase in the number of female directors afterwards. As the RD estimate is locally estimated, it is difficult to extrapolate these results to the full sample. As seen in Column 2, the global RD coefficient estimated over the whole sample is also significant. As this does not depend on close elections, it supports the relevance of the RD estimates for a broader sample.

4.3 Placebo Tests

Meyersson (2014) and Cattaneo, Idrobo, and Titiunik (2019) recommend examining placebo outcomes to validate the RD design. One placebo outcome is to examine the change in the number of female directors in the same zip code prior to the election. If the change in the number

[15] The figure shows averages within bins of 10%, controlling for the covariates and fixed effects included in Table 4. The magnitude of the estimated coefficient in Table 4 and the figure are not directly comparable, as the Table uses triangular kernel within the bandwidth while the figure displays equally weighted averages within the bin.
[16] The unconditional increase in the number of female directors is 0.075, as tabulated in Table 1.

of female directors is due to the election win by the woman candidate, there should be no effect in the prior year.

We therefore implement the RD estimation in the year prior to the election (i.e., when *Post* equals zero). Table 5A replicates all the specifications displayed in Table 4 for the prior year. The coefficient of *Woman Win* is not significant in any specification. This can also be seen in Figure 5, the graphical representation of the regression function fit around the cutoff for the year prior to the election. Because many of the estimated coefficients of *Woman Win* in the placebo tests are positive, we also test whether they are significantly different from the estimated coefficients from the year after the election. The last row in Table 5A tests for the difference in the estimated coefficient of *Woman Win* in Table 5A (placebo sample) and in the same column in Table 4 (treated sample). The estimated coefficient is different from the placebo coefficient in most specifications.

The results from the placebo sample show that firms headquartered in areas where women candidates will later win elections are associated with no significant increase in women directors prior to those elections. This evidence mitigates concerns that gender norms in the area account for both the women candidates' electoral wins and the increases in board gender diversity. It also addresses the reverse causality concern that an increase in the number of women directors resulted in the woman candidate's subsequent electoral win in that zip code.

We also estimate the model at arbitrary cutoffs for winning that are different from zero. Specifically, *Woman Win Placebo* takes the value of one if the *Woman Win Margin* is greater than the cutoff of -10% (Columns 1 and 3) or + 10% (Columns 2 and 4). As seen in Table 5B, there is no evidence that placebo election wins by women candidates result in changes in the number of female directors in the subsequent year.

4.4 Checking for Discontinuity in Covariates

The validity of the RD estimation requires that there be no discontinuity in the covariates at the cutoff point. To check this assumption, we implement the base RD estimation—that is, with a linear regression function, triangular kernel, and optimally determined bandwidth—with each covariate as the outcome variable and *Woman Win* as the treatment variable. The results, displayed in Table 6, show that the coefficient of *Woman Win* is not significant for any of the covariates except the log of the per capita personal income. Overall, there appears to be little evidence of discontinuity in the covariates at the cutoff point.

4.5 Robustness

In this section we perform a series of tests to examine the robustness of our results to underlying assumptions.

4.5.1 RD Specifications

Imbens and Lemieux (2008) recommend an extensive sensitivity analysis of the RD specification with respect to bandwidth and control function. Table 7, Panel A reports the coefficient of *Woman Win* for different bandwidths and polynomial orders in the control function. The columns have different variations in bandwidths, while the rows have different polynomial orders. The estimated coefficients are all positive, and most are significant. The magnitude and significance of the estimated coefficients increases as the bandwidth is reduced and as the polynomial order of the control function increases.

Panel B reports the coefficients of *Woman Win* from the placebo sample—that is, the change in the number of women directors prior to the election in the same zip code. Most of the coefficients are not significant. The exception is at the smallest bandwidth (0.05), where the coefficient is significant for some control functions. Even in these cases, however, the estimated coefficient is significantly smaller for the placebo sample than for the treated sample. Panel C

reports the z values of a test for the difference between the coefficients estimated in the treated and placebo samples, and shows that those for the treated sample are significantly larger.[17]

4.5.2 Controlling for Google Search Trends

Giannetti and Wang (2023) document that heightened public attention to gender equality is associated with an increase in board gender diversity. To see if public attention to gender equality explains some of our results, we follow Giannetti and Wang (2023) and use Google Search Trends data on "gender equality" to construct two variables: *Gender Equality SVI* and *Gender Equality SVI (State)*.[18] We estimate our base specification including these variables as covariates. As seen in Panel A of Table 8, inclusion of *Gender Equality SVI (State)* does not materially change the results, as the coefficient of *Woman Win* is significant for the year after the election (*Post* = 1) and insignificant for the year prior (*Post* = 0). Panel B shows that the inclusion of *Gender Equality SVI* as a covariate leads to similar results.[19] Overall, these results suggest that controlling for public attention (as captured by Google Trends data) does not materially impact the results.

4.5.3 Controlling for Presidential Election Cycles

Elections that are part of presidential election cycles get higher voter turnouts, which may garner greater voter attention for the woman candidate. However, voter attention to the presidential election may also reduce the salience of House and Senate races. To examine whether the presidential election cycle affects our results, we estimate the model in separate subsamples.

[17] For robustness, we also estimate the RD specification with the outcome variable being the change in the proportion of women directors on the board. The coefficient of *Woman Win* continues to be positive and significant. The coefficient is not significant when it is estimated in the placebo sample prior to the election. We have not reported these results, for brevity.

[18] *Gender Equality SVI* captures the time series of search volume for the United States as a whole, while *Gender Equality SVI (State)* captures search volume by state. See Giannetti and Wang (2023) for further details on the construction of the two variables.

[19] We have also included the *Gender Equality SVI* and *Gender Equality SVI (State)* in an OLS estimation in a sample of close elections and find similar results. There continues to be significant evidence of an increase in female directors after election wins by women candidates.

Results for sample elections that were part of the presidential cycle—that is, in 2004, 2008, 2012, and 2016—are tabulated in Panel A of Table 8B, while the results for the remaining elections are tabulated in Panel B. The coefficient of *Woman Win* is significant in both subsamples in the year after the election and higher than in the year prior to the election. These results show that the presidential election cycles do not have a material impact on the results.

4.5.4 Alternate Measure of Board Gender Diversity

The dependent variable is the change in the number of female directors, as we think that the addition of a woman director, irrespective of board size, is the most relevant outcome variable. However, an alternate measure of board diversity—the fraction of the board that is female—might better capture women's overall importance on the board. We therefore also estimate the base specification with the change in the fraction of women directors as the dependent variable. The results, which are tabulated in Panel A of Table 8C, are similar to those for the number of women directors, as a win by a woman candidate is associated with an increase in the fraction of women directors in the year after the election. We also construct the change in the ratio of female directors within independent directors and find that this does not change our results (see Panel B of Table 8C).

4.5.5 Board Committees

Though regulators and institutional investors have long advocated for more women on boards, others have argued that higher board representation does not necessarily represent an increased role for women. Field, Southern, and Yore (2020), for example, document that although the number of women on boards has increased, women are still less likely to be members of important board committees (see, also, Chidambaran, Liu, and Prabhala (2019)). To gauge changes in the importance of women directors, we examine their membership on two important board

committees: audit and compensation.[20] The outcome variable for this analysis is the change in the number of women directors on these committees in Panel A, and the change in the fraction of women directors on these committees in Panel B.

As seen in Table 8D, we find that the coefficient of *Woman Win* is positive and significant for both specifications. Firms increase the number and fraction of female directors on important board committees after close election wins by women candidates. These results point to broader gains for women directors arising from electoral wins by women candidates.

4.5.6. Democratic and Republican Counties

To examine if the results are influenced by voters' political affiliations, we classify counties as Democratic (Republican) if they voted for the Democratic (Republican) candidate in the previous two presidential elections.[21] As seen in Table 8E, we find a significant effect of winning women candidates on board gender diversity in both samples. For Republican counties (Panel B), we find a significant effect even prior to election, though the increase in female directors is significantly higher after the election. The results suggest that a win by women candidates is followed by increased board diversity irrespective of a county's political affiliation.

5. Mechanisms

The underlying mechanism we propose for the results is that women's electoral wins change gender-related social norms in the local area. Firms headquartered in the area respond to these changes by increasing gender diversity on their boards. To provide evidence for our proposed channel, we would ideally document the changes in gender norms after women's election wins, as

[20] We examine audit and compensation committee membership as these tend to have fewer women. In unreported tests we have also included nominating committee with similar results. We thank the reviewer for this suggestion.
[21] We thank an anonymous reviewer for this suggestion. We have also estimated the base model separately if the winning woman candidate is a democrat or a republican. We find significant effect on the number of female directors after wins by both democratic and republican women candidates. We have not tabulated these results for brevity.

well as firms' responses to those changes. This is a difficult approach, given that data on gender norms, their geographic distribution, and how they change over time is scarce. Therefore, we adopt an alternate strategy, which is to examine cross-sectional differences in the treatment effects implied by the proposed mechanism. Specifically, we first examine the election characteristics that lead to differences in the importance of gender and thus result in differing impacts on social norms and board gender diversity. Next, we examine firm characteristics that result in disparate responses to changes in local social norms. Lastly, we use the limited data available from the General Social Survey (GSS) to shed some light on changes in gender norms.

5.1 Election Salience

Elections differ in their impact and potential to bring about change in social norms. Campbell and Wolbrecht (2006) and Wolbrecht and Campbell (2017) document stronger role model effects of non-incumbent women candidates in House, Senate and gubernatorial elections, as these elections are more important and visible. In line with their findings, our main sample consists of these elections. Below, we identify other election characteristics that are likely to have disparate effects on local gender norms.

5.1.1 House Elections Relative to Senate and Gubernatorial Elections

Senate and gubernatorial elections are more consequential than House elections, and impact voters across the state. Being more visible, they increase the salience of gender and, hence, are more likely to change gender norms. We therefore estimate our base specification separately for firms in sample House elections and firms in Senate and gubernatorial elections. As seen in Panel A of Table 9, the results are significant for both. In line with the proposed mechanisms, however, the estimated coefficient of *Woman Win* is significantly higher in the year after women's

Senate and gubernatorial election wins than in the year after women's House election wins, suggesting a higher impact of election wins in Senate and gubernatorial elections.

5.1.2 Media Coverage

Elections where the woman candidate has higher visibility are more likely to bring attention to gender and to generate discussion around gender issues. Consequently, those elections may have a stronger impact on gender-related social norms. We use media coverage garnered by the woman candidate to proxy for the attention she receives, and expect a stronger treatment effect on board gender diversity when the winning woman candidate has higher coverage.

We collect data, from the Dow Jones Factiva database, on the number of articles that mention the woman candidate's name from six months prior to six months after the election. We create the *High (Low) Media* group consisting of all firms located in zip codes where women candidates enjoy above (below) median media coverage. To determine the median media coverage, we use only House candidates, as Senate and governor candidates receive higher media coverage on account of their races being statewide and are always classified in the *High Media* group.[22] In line with Meyerson (2014), the median value is determined in the sample of close elections that is used for the RD estimation (i.e., those in the 0.10 bandwidth), as this makes the split more relevant.

As seen in Panel B of Table 9, the coefficient of *Woman Win* for *Post* equal to 1 is positive and significant for the *High Media* group and not significant for the *Low Media* group, with the difference between the two groups' coefficients being significant. Thus, the treatment effect of women's electoral wins is confined to elections where the woman candidate is sufficiently visible. We estimate a similar specification for the placebo sample—that is, when *Post* is equal to zero—

[22] This results in the number of observations being larger in the *High Media* group than in the *Low Media* group.

and find that the coefficient of *Woman Win* is marginally significant for the *Low Media* group, but not significantly different from when *Post* is equal to one. In other words, the election did not change the increase in female directors for firms located in districts where women candidates receive lower media coverage.

In sum, firms in counties where winning women candidates receive high media coverage significantly increase their number of female directors in the post-election year, relative both to the prior year and to firms in counties where women candidates are less visible. These findings support a causal effect of women's election wins on the increase in the number of women directors in this group.

5.1.3 Local Engagement with the Election

The election outcome and the information it conveys are likely to be more meaningful and to bring about more change if the voters are engaged. In districts where voters are actively involved with election issues and energized to vote, citizens are more likely to follow the election outcomes and be impacted by the woman candidate's electoral win. We gather data on voter registration and voter turnout at the county level for the elections in our sample from David Leip's Atlas of US Presidential Elections. Firms located in counties with higher than median voter turnout (estimated in the sample of close elections within the 0.10 bandwidth) are classified as the *High Turnout* group; others are in the *Low Turnout* group.[23]

The results, tabulated in Panel C of Table 9, show the firms located in *High Turnout* counties increase the number of female directors more than firms in *Low Turnout* counties. There is no significant effect in either group in the placebo sample. The higher treatment effect when

[23] Voter turnout is the ratio of number of people that voted to the number of registered voters in the county. Voter turnout varies substantially depending on whether the election year involves a presidential election; therefore, we do not benchmark voter turnout to prior election cycles in the county.

there is higher local engagement with the election supports the notion that changing local attitudes are the underlying mechanism for the observed treatment effect.

5.2 Firms' Responsiveness to Local Changes

Firms differ in how closely tied they are to the local community and, hence, how much they are impacted by its changing social norms. If a large fraction of the board and senior executives reside locally and thus experience the election-induced change in gender norms, the firm may be more inclined to appoint a women director. We create two proxies (discussed below) to capture a firm's ties to the local community.

Boards may also be more responsive to electoral wins by women candidates if they are under shareholder pressure to change. We therefore examine the responses of boards where some directors have negative recommendations from ISS and boards where shareholders have proposed gender-related changes.

5.2.1 Proportion of Local Directors

To capture the proportion of the board that resides locally, we use data on the residences of directors constructed through LexisNexis searches by Bernille, Bhagwat, and Yonker (2018).[24] A director is characterized as being local if his or her residence is within 50 miles of the firm headquarters. On average, the firms in the 0.10 bandwidth have about 44% of the board residing locally. As before, we divide the sample into boards with a *High* and *Low* fraction of local directors, based on whether the fraction is above or below the median. As seen in Panel A of Table 10, the coefficient of *Woman Win* is significant for both the *High* and *Low* groups but is

[24] We are grateful to Scott Yonker for sharing this data with us. The data consists of director residences of S&P 1500 firms for the period from 1996 to 2013. Please refer to Bernile, Bhagwat, and Yonker (2018) for further details on data collection and characteristics.

significantly larger for the *High* group.[25] While the coefficient for the *High* group is marginally significant prior to the election, it is still significantly lower before the election than after it, supporting a causal effect of women's election wins in firms with a higher fraction of local directors.

5.2.2 Local Institutional Investors

Like local directors, local shareholders are likely to make the firm more aware and responsive to local changes. Local institutional investors in particular have been shown to be more effective monitors, as they are more informed about firm policies and share social networks with the firm's executives (Chhaochharia, Kumar, and Niessen-Ruenzi (2012) and Gasper and Massa (2007)). Local institutional investors are also associated with higher firm CSR activities (see Chang, Kabongo, and Li (2016)) and may be more likely to initiate a discussion with the firm regarding board diversity. The greater the influence of local institutional investors, the larger the expected treatment effect of women's electoral wins.

We get the zip codes of mutual funds' locations from the CRSP mutual fund database and match the CRSP database with the Thomson Reuters mutual fund holdings database using the MFLINKS file. We calculate the firm's fractional ownership of local institutional shareholders and use it as a proxy for institutional shareholders' influence. Local institutions are defined as mutual funds located within 50 miles of the firm's headquarters. As before, we divide the sample into *High* and *Low* groups based on the median values in a sample of firms within 0.10 bandwidth. As seen in Panel B, the coefficient of *Woman Win* is significant for both the *High* and *Low* groups, but is significantly higher for the *High* group than for the *Low* group. We find that the coefficient

[25] The number of observations in the 0.10 bandwidth for this analysis is lower, as we have data on director residences only till 2013.

of *Woman Win* is also significant in the placebo sample for the *High* group. As seen in Table 6, there is no discontinuity in institutional ownership around the cutoff; that is, firms in counties where women win or lose by a small margin do not differ in their institutional ownership. Thus, high local institutional ownership isolates areas where firms were increasing women directors even prior to women candidates' election wins.[26] However, as the estimated coefficient is significantly higher after the election than before it, women's electoral wins still causally increase the number of women directors.

5.2.3 Negative ISS Recommendations

ISS recommendations have a significant impact on shareholder voting. Malenko and Shen (2016) document that a negative ISS recommendation results in a 25% drop in shareholder support. Negative ISS recommendations and low shareholder support have been shown to have negative consequences for directors (see Cai, Garner, and Walkling (2009), Aggrawal, Dahiya, and Prabhala (2019), and Fos, Li, and Tsoutsoura (2018)). Directors that have negative recommendations from ISS are likely to be alert to and responsive to changes in the firm's environment in order to improve their standing with shareholders.

We construct a (*No*) *Negative ISS* dummy, which takes the value of one if at least one (no) director has a negative recommendation from ISS. In line with the notion that boards with a director who has a negative recommendation are likely to be more responsive, we find that such boards are significantly more likely to increase the number of female directors after women candidate's election wins, as seen in Panel C of Table 10. This increase is significantly higher than what was seen in these firms in the prior year, and significantly more than what is seen for boards

[26] Firms with high local institutional ownership tend to be in more populated urban locations that have a higher density of institutional investors. These firms are likely to be increasing their board diversity even prior to the election, though the election win significantly adds to the change. We thank an anonymous reviewer for this link.

with no negative ISS recommendation.[27] These results suggest that boards under pressure are more vigilant and responsive to changes in their environment.

5.2.4 Gender-Related Shareholder Proposals

To study whether shareholders exert more pressure to improve gender diversity following wins by women candidates, we also examine the shareholder proposals submitted to firms.

We get shareholder proposal data from ISS Risk Metrics and identify gender-related proposals as those with "gender," "diversity," "women," and other related words in their description.[28] We then examine if electoral wins by women candidates are associated with more gender-related shareholder proposals. The outcome variable *Fraction of Gender Related Shareholder Proposals* is the fraction of all shareholder proposals that are gender-related. As shown in Panel D, the coefficient of *Woman Win* is positive and significant in the year after the election and not significant in the year prior to the election.[29]

The results suggest that firms receive more gender-related shareholder proposals after women's election wins. Shareholder proposals may be a channel through which local shareholders influence firm behavior, but these results should be interpreted with caution, for two reasons. First, the incidence of gender-related shareholder proposals is low, as only about 1% of shareholder proposals are gender-related. Second, data limitations prevent us from knowing the location of the

[27] Boards with negative ISS recommendations were increasing their number of female directors even prior to the election (i.e., the coefficient of *Woman Win* is significant in the Post = 0 period). However, this pattern significantly increases after women candidates' election wins.

[28] We search for the following words: "diversity," "gender," "women," "female," "EEO," "equal employment opportunity," "sexual harassment," "inequitable," and "pay equity." We then exclude proposals that have the words "identity" and "orientation," which are mostly used in reference to sexual identity and sexual orientation. Although they are often used along with diversity and gender terms, they are not related to equity of women in the firm. The results are qualitatively similar if we do not exclude these proposals.

[29] Like the prior model where the outcome variable was the change in the number of female directors, the base specification for this estimation includes the same covariates and year and industry fixed effects. The estimation is for local linear approximation and a triangular kernel.

shareholder submitting the proposal. Therefore, though we see a higher fraction of gender-related shareholder proposals, we cannot say that they were submitted by local shareholders. [30]

5.3. Change in Gender Norms

In this section, we examine changes in gender norms arising from women candidates' electoral wins. To capture changes in attitudes, we use data from GSS and focus on three questions that capture gender norms and were consistently asked over several decades.[31] These questions, which are referenced in the GSS survey as *fefam*, *fechld*, and *fepressh*, were included in the surveys from 1977 to 2010 (see Appendix C for details).

We examine change in gender norms from 1990 to 2010, as this is the longest period of overlap between the election data and GSS survey. Since the responses to the GSS questions are available only at the state level, we include only gubernatorial and Senate elections, both of which are statewide. In line with prior analysis. we only include elections where a non-incumbent woman candidate runs against a male candidate. We convert the responses to the three questions to a numeric value, with larger values indicating pro-female attitudes. We average the responses of all respondents in the state and across all three questions, then calculate the change after the election (for *Post* = 1) and prior to the election (*Post* = 0). To ensure that we compare change in gender attitudes for the same state around elections, we include an election in the sample only if we have an observation for the state for both *Post* = 1 and *Post* = 0.

[30] Chhaochharia, Kumar, and Niessen-Ruenzi (2012) document that local institutional shareholders are more likely to submit shareholder proposals, suggesting that is it likely that these gender-related proposals were submitted by local shareholders. However, we do not have the data to show this.

[31] The publicly downloadable GSS data does not include sensitive information about the respondent, such as where the respondent resides. For these three questions over time, we obtain respondent-specific information like the state of residence and gender from the Danielle Thomsen website (https://dataverse.unc.edu/dataset.xhtml?persistentId=doi:10.15139/S3/0CS5ZC). These data have been analyzed and published in Koch and Thomsen (2017). There were other questions that we did not include because they did not have the same coverage over time.

The final sample comprises 46 elections, with women losing 27 and winning the rest. As the sample is small, we cannot implement an RD design. We report the results from an OLS regression in Table 11. As seen in Panel A, the coefficient of *Woman Win* is positive and significant after the election (*Post* = 1) but not before it (*Post* = 0), and the two coefficients are significantly different from each other. The change in response is significant for the question *fepresch* (Panel B) but not for the other two questions.

The sample size is small, and although the results for all three gender-related questions are in the same direction, they are significant for only one of them. The results thus provide a tentative indication of a change in gender-related social norms.

5.4 Alternate Mechanisms

Brogaard et. al. (2024) document that winning women candidates increase the proportion of US government contracts that go to women-owned business, and that this effect increases with the female representative's tenure and if she is on a powerful congressional committee. This suggests that boards could increase the number of female directors in anticipation of female-friendly regulatory policies. As documented before, we find that the treatment effects are mostly confined to visible women candidates and are seen in local firms. If expectation of women-friendly regulation is the underlying mechanism, the effect on board diversity should be related to all wins by women and not confined to women that had greater visibility. Further, the effect should be seen for all firms and not just local ones.

To further explore this mechanism, we examine elections involving incumbent women candidates, which have been excluded from our analysis so far. Incumbent women candidates are likely to be more senior and more established, and their wins should further solidify their position and increase the likelihood of pro-female policies. In our test, however, we find no evidence of a

change in female directors after wins by incumbent women candidates (see Appendix Table 1). As these are established women, their election wins do not generate a discussion on gender (Wolbrecht and Campbell 2017) and, hence, have little impact on local gender norms, which is in line with our proposed mechanism.

It is also possible that the newly appointed female directors are politically connected to the winning woman candidate and represent the local firm's attempt to build political connections rather than its response to a change in local gender norms. To study this, we searched for and obtained data on the background of all the new women directors. Most had corporate backgrounds, with some being attorneys, consultants, or advisors. We found little evidence that they had political backgrounds or were politically connected to the winning woman candidate.

6. Conclusion

We use an RD design to document a causal effect of women candidates' electoral wins on increasing the number of female board directors at firms located in these zip codes. The underlying mechanism we propose for this result is that women's electoral wins change gender-related social norms in the local area, and firms headquartered there respond by increasing the gender diversity on their boards. We find support for this mechanism. The treatment effect varies in measures of the election's consequence, the woman candidate's visibility, and local voters' engagement with the election, which suggests that elections with a greater potential for social change produce higher treatment effects. The treatment effect is also higher when the firm is more likely to be integrated with, and responsive to, the local community, which further supports the notion that the treatment effect arises from local changes in norms.

A growing literature documents the effect of gender-related norms on firm policies, and this study contributes by being one of the few that examine a mechanism for bringing about change

in underlying gender norms. The effect of women candidates' electoral wins on board gender diversity does not involve regulatory mandates or other forms of external pressure. As the effect of electoral wins is organic and voluntary, it has the potential to bring about broader gains for women. Evidence of the spillover of gender attitudes from the political to the corporate world links the literatures on each, and suggests that even small changes towards gender equality in one dimension may have larger overall impacts on reducing the gender gap.

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Appendix A: Data Sources and Variable Construction

Variable Name	Definition	Source
Woman Win Margin	The vote share of the woman candidate minus the vote share of the male candidate	MIT Election Lab, Rutgers CAWP, David Leip's Atlas
Woman Win	An indicator variable that takes the value of one if the woman wins the election	MIT Election Lab, Rutgers CAWP, David Leip's Atlas
Change in the number of Female Directors	Year over year change in the number of female directors	ISS Risk Metrics Board Data
Change in the proportion of Female directors	Year over year change in the fraction of the board that consist of female directors	ISS Risk Metrics Board Data
Change in the number of Female Committee Members	Year over year change in the number of female committee members. The committees considered are audit and compensation.	ISS Risk Metrics Board Data
Fraction of Gender Related Shareholder Proposals	Fraction of all shareholder proposals that refer to gender-related issues	ISS Shareholder Proposal Data
Total Assets	Total assets (Millions)	Compustat
ROA	Return on assets: operating income/ total assets	Compustat
IO	Institutional ownership, measured as the fraction of shares outstanding held by institutional investors	13F, Thomson Reuters
Lagfdir	Lagged value of the number of female directors on the board	ISS Risk Metrics Board Data
Lagfcomm	Lagged number of female directors on the audit and compensation.	ISS Risk Metrics Board Data
Log (PI)	Log of personal income per capita at the county level	Bureau of Economic Analysis (BEA)
Log (Pop)	Log of total population at the county level	Bureau of Economic Analysis (BEA)
PCT Women	Proportion of women at the county level	SEER data (https://seer.cancer.gov/popdata/)
Female to Male Income Ratio	Female to male income ratio at the county level	American Community Survey data

Female Labor Force Participation	Percentage of total number of working age women in the labor force at the county level	American Community Survey data
Male Labor Force Participation	Percentage of total number of working age men in the labor force at the county level	American Community Survey data
Female Unemployment Rate	Percentage of female labor force that is unemployed at the county level	American Community Survey data
Male Unemployment Rate	Percentage of male labor force that is unemployed at the county level	American Community Survey data
Media Coverage	Number of articles that mention the woman candidate during one year around the election	Factiva
Local Election Turnout	County level voter turnout	David Leip's Atlas of Presidential Elections
Local support for the Woman Candidate	Fraction of campaign contributions received locally by the woman candidate – fraction of campaign contributions received locally by the male candidate	FEC website
Proportion of Local Directors	Fraction of directors that reside within 50 miles of the firm's HQ	Scott Yonkers Data
Number of Local Institutional Investors	Number of institutional investors that are within 50 miles of the firm's HQ	CRSP Mutual fund Data
Ownership by Local Institutional Investors	Ownership by institutional investors that are within 50 miles of the firm's HQ	CRSP Mutual fund Data, Thomson Reuters Mutual Fund Holdings Data

Appendix B: Incidence of Gender-Related Shareholder Proposals

Huberman (2001) and Ivkovic and Wisebenner (2005)) document that retail investors are more likely to hold local firms. Becker, Ivkovic, and Wisebenner (2011) find that firms make changes to reflect the preferences of their local retail shareholders. This suggests that many of the firm's retail shareholders are likely to be local, and as they experience the social changes arising from electoral wins of women candidates, they may also put pressure on firms to increase board gender diversity. Unfortunately, we do not have data on the proportion of firm's retail investors that are local. However, local retail investors, along with local institutional investors, may initiate more shareholder proposals to address gender diversity at the firm. Chhaochharia, Kumar, and Niessen-Ruenzi (2012) document that submitting shareholder proposals is one of the ways local institutional shareholders engage with the firm. Other ways include a higher likelihood of attending shareholder meetings and privately communicating with the firm.

We study shareholder proposals submitted to firms to examine if there is greater pressure from shareholders to improve gender diversity at the firm following electoral wins by women candidates in close elections in the zip code. We get shareholder proposal data from ISS Risk Metrics and identify gender-related proposals as those that have "gender," "diversity," "women," and other related words in their description.[32] We examine if electoral wins by women candidates are associated with more gender-related shareholder proposals. The outcome variable *Fraction of Gender Related Shareholder Proposals* is the fraction of all shareholder proposals that are gender-related. As can be seen in Table 10 Panel D, the coefficient of *Woman Win* is positive and significant in an RD estimation with the base specification and is not significant in the year prior to the election.

The results suggest that shareholder proposals calling for greater gender diversity at the firm may be one channel by which local shareholders, both retail and institutional, influence firm behavior. However, these results should be interpreted with caution. First, the incidence of gender-related shareholder proposals is low. Only about 1% of shareholder proposals are gender-related. Second, data limitations prevent us from knowing the location of the shareholder submitting the proposal. Therefore, though we see a higher fraction of gender-related shareholder proposals, we cannot say that these proposals were submitted by local shareholders.

[32] We search for the following words: "diversity," "gender, "women," "female," "EEO," "equal employment opportunity," "sexual harassment," "inequitable," and "pay equity." We exclude proposals that have the words "identity" and "orientation." These two words were mostly used in regard to sexual identity and sexual orientation. Although they were often used along with diversity and gender terminology, they were not related to equity of women in the firm. The results are qualitatively similar if we do not exclude these proposals.

Appendix C: **Details About the GSS Survey**

The following three questions from the GSS survey were included to capture gender norms and changes in gender norms.

Fefam: It is much better for everyone involved if the man is the achiever outside the home and the woman takes care of the home and family.

Years included in GSS : 1977, 1985, 1986, 1988, 1989, 1990, 1991, 1993, 1994, 1996, 1998, 2000, 2002, 2004, 2006, 2008, 2010.

Fechld: A working mother can establish just as warm and secure a relationship with her children as a mother who does not work.

Years included: 1977, 1985, 1986, 1988, 1989, 1990, 1991, 1993, 1994, 1996, 1998, 2000, 2002, 2004, 2006, 2008, 2010.

Fepresch: A preschool child is likely to suffer if his or her mother works.

Years included: 1977, 1985, 1986, 1988, 1989, 1990, 1991, 1993, 1994, 1996, 1998, 2000, 2002, 2004, 2006, 2008, 2010.

Calculating Change in Gender Norms

The table details the years of the GSS survey used to calculate the change in responses around elections. Column 1 lists the election year in the sample. Column 2 (3) lists the years over which we estimate the Post (Pre) election change in gender norms.

Election Year	**Post Election Change Post = 1**	**Pre Election Change Post = 0**
1990	1990 to 1993	1988 to 1990
1992	1993 to 1994	1990 to 1991
1994	1994 to 1996	1991 to 1994
1996	1996 to 1998	1994 to 1996
1998	1998 to 2000	1996 to 1998
2000	2000 to 2002	1998 to 2000
2002	2002 to 2004	2000 to 2002
2004	2004 to 2006	2002 to 2004
2006	2006 to 2008	2004 to 2006
2008	2008 to 2010	2006 to 2008

Figure 1: Distribution of Firms in Sample Elections

The figure displays the distribution of sample firms headquartered in zip codes where Senate, House, and gubernatorial elections involved a non-incumbent woman candidate running against a male candidate from 2004 to 2016.

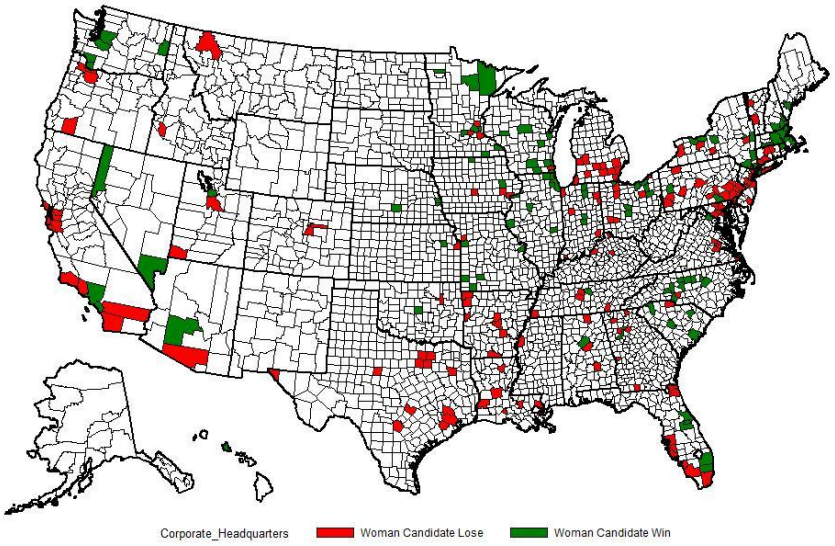


Figure 1A: Distribution of Firms in Close Elections

The figure displays the distribution of sample firms headquartered in zip codes where Senate, House, and gubernatorial elections involved a non-incumbent woman candidate running against a male candidate from 2004 to 2016 with an election win margin of less than 9.4%, the optimal bandwidth of our base RD specification.

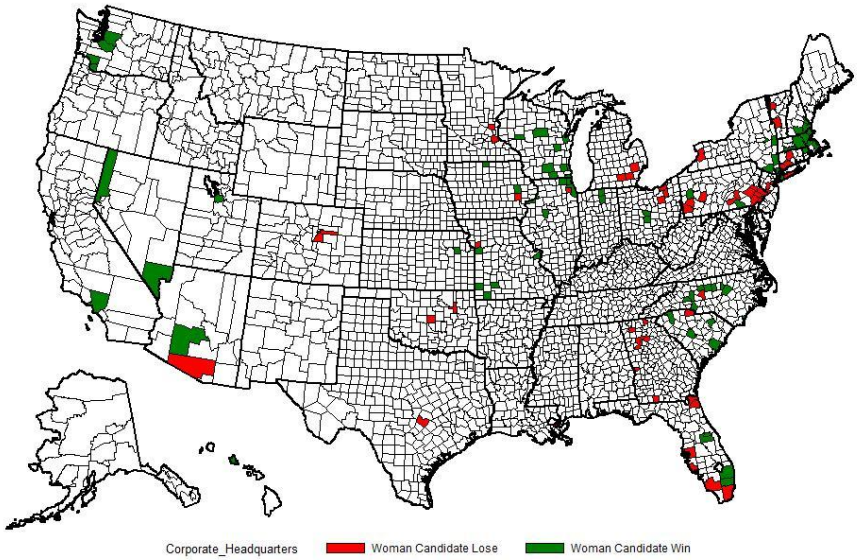
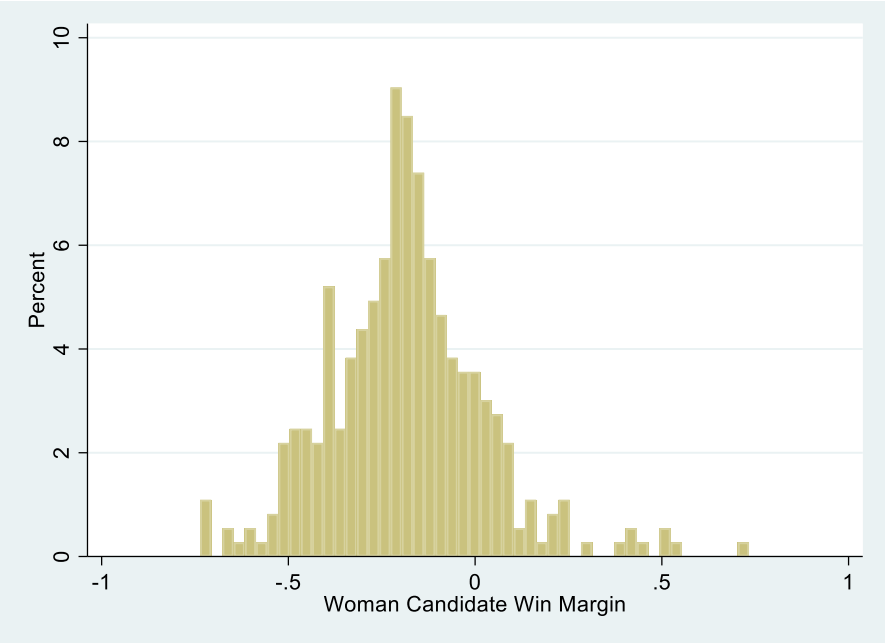
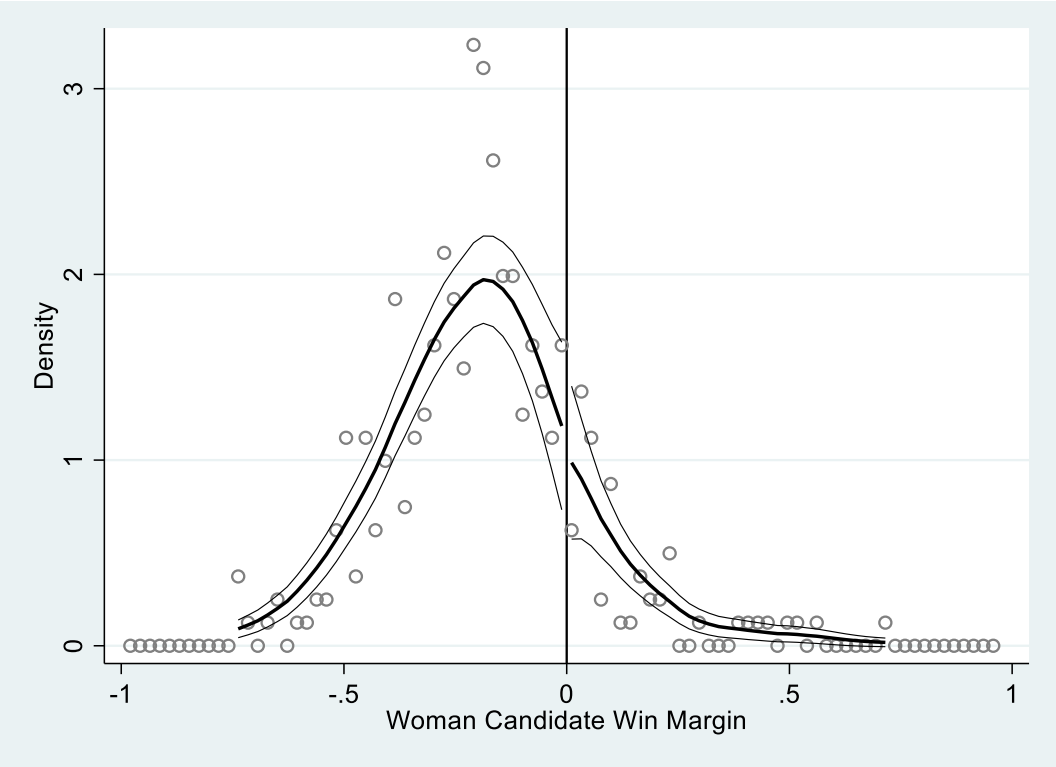


Figure 2: Histogram for the Forcing Variable



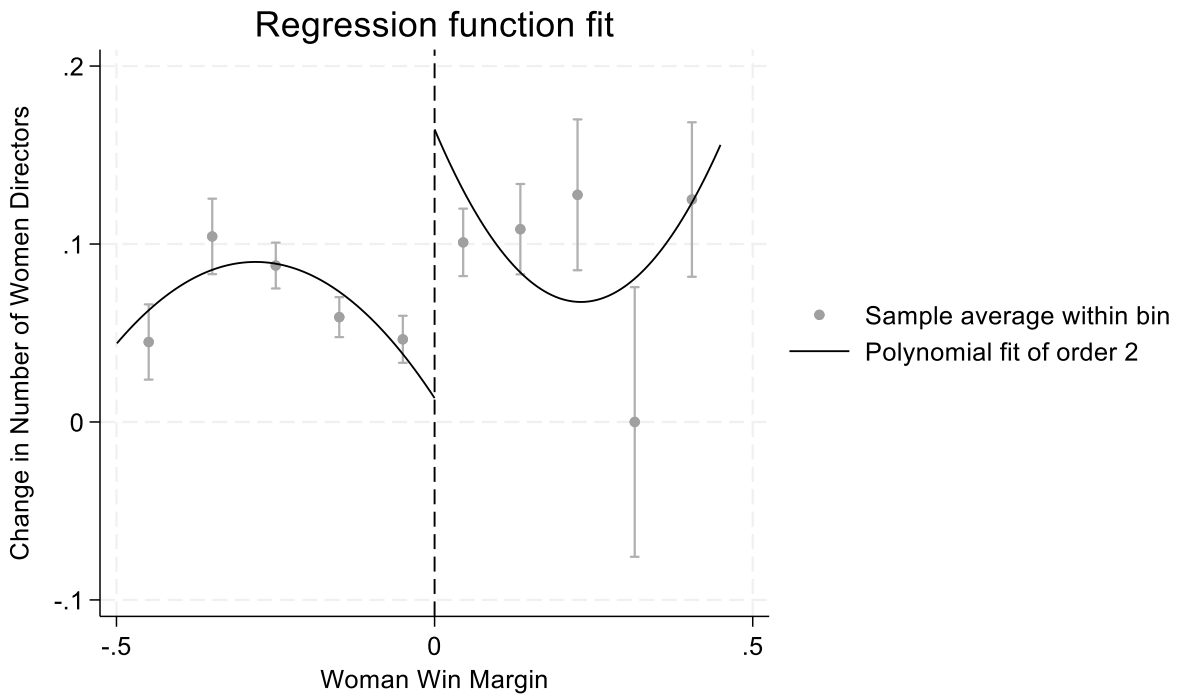
The figure plots the histogram for the forcing variable, *Woman Win Margin*, in House, Senate, and gubernatorial races over the 2004 to 2016 period where a non-incumbent woman candidate runs against a male candidate. *Woman Win Margin* is the fraction of votes obtained by the woman candidate minus the fraction obtained by the male candidate. As the number of elections is small (365), we have plotted the histogram with a 3% bin size.

Figure 3: McCrary Density Test



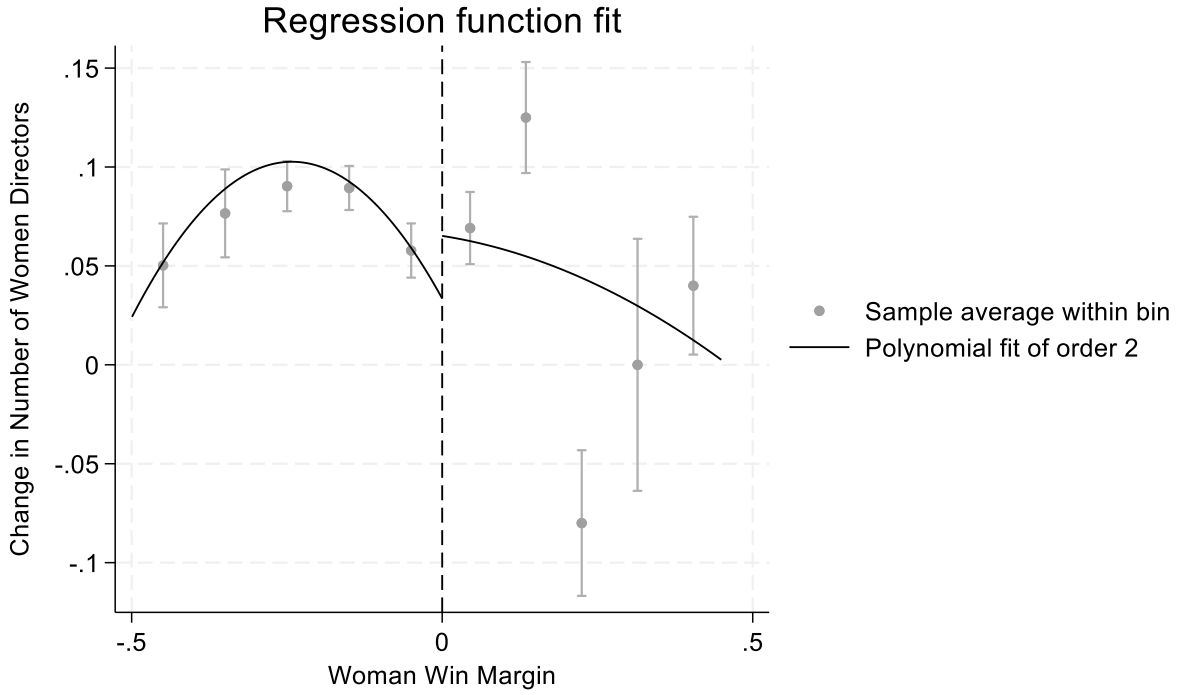
The figure shows the McCrary (2008) test for discontinuity in the denisty of the *Woman Win Margin* in a sample of 365 House, Senate, and gubernatorial elections where a non-incumbent woman ran against a male candidate over the 2004 to 2016 period. The discontinuity estimate is -0.0455, and the standard error is 0.32

Figure 4: Graphical Illustration of RD Estimation



The graph shows an RD estimation where the outcome variable is the change in the number of women directors in the year after the election—that is, for *Post* equal to one. The forcing variable is *Woman Win Margin*, which is the share of votes obtained by the woman candidate minus the share obtained by the male candidate. The estimation includes the same covariates and fixed effects as in Table 4.

Figure 5: Placebo Tests for the Year Prior to the Election



The graph shows an RD estimation where the outcome variable is the change in the number of women directors in the year prior to the election—that is, for *Post* equal to zero. The forcing variable is *Woman Win Margin*, which is the share of votes obtained by the woman candidate minus the share obtained by the male candidate. The estimation follows the same covariates and fixed effects as in Table 5A.

Table 1: Summary Statistics

This table presents the summary statistics for the outcome variable and covariates for our sample. The sample consists of S&P 1500 firms headquartered in zip codes covered by sample elections. Sample elections include all House, Senate and gubernatorial elections where a non-incumbent woman candidate ran against a male candidate from 2004 to 2016. Change in female directors (committee members) is the change from the prior year in the number of women on the board (board committees). The included board committees are compensation and audit. *Woman Win* takes the value of one if the woman candidate wins the election. *Post* takes the value of one (zero) for the year after (of) the election. Covariates for demographic characteristics of the firm's headquarters are measured at the county level. *** and ** denote significance at the 1% and 5% levels.

	Full Sample Mean (S.D)	**Woman Win = 1 (A) Mean (S.D)**	**Woman Win = 0 (B) Mean (S.D)**	**Difference A- B (T Stat)**
Outcome Variable				
Post = 1				
Change in female directors	0.075	0.102	0.069	0.032
	(0.46)	(0.42)	(0.47)	(1.35)
Change in female committee members	0.068	0.080	0.065	0.015
	(0.48)	(0.48)	(0.48)	(0.59)
Post = 0				
Change in female directors	0.073	0.063	0.075	-0.012
	(0.46)	(0.44)	(0.47)	(-0.51)
Change in female committee members	0.041	0.037	0.041	-0.004
	(0.44)	(0.44)	(0.44)	(-0.89)
Woman Win	0.186			
	(0.39)			
Covariates				
Lag number of female directors	1.220	1.283	1.205	0.078**
	(1.02)	(0.99)	(1.02)	(2.08)
Lag number of female committee members	1.034	1.108	1.017	0.091***
	(0.94)	(0.93)	(0.94)	(2.65)
Log of Total Assets	7.871	7.847	7.877	-0.030
	(1.62)	(1.56)	(1.62)	(-0.51)
Return on Assets (ROA)	0.047	0.058	0.044	0.014***
	(0.09)	(0.07)	(0.10)	(4.08)
Institutional Ownership (IO)	0.705	0.707	0.705	0.002
	(0.27)	(0.26)	(0.27)	(0.15)
Log (Personal Income Per Capita)	10.825	10.756	10.841	-0.085***
	(0.34)	(0.25)	(0.36)	(-6.80)
Log (Population)	13.801	13.735	13.816	-0.080**
	(1.03)	(1.06)	(1.02)	(-2.13)
Proportion of Women	0.512	0.513	0.512	0.001***
	(0.01)	(0.01)	(0.01)	(4.65)
Female Male Income Ratio	0.703	0.707	0.702	0.004**
	(0.05)	(0.05)	(0.06)	(2.19)
Female Labor Force Participation	74.397	75.626	74.116	1.510***
	(3.13)	(2.46)	(3.20)	(13.36)
Male Labor Force Participation	85.612	85.829	85.563	0.267**
	(3.26)	(2.89)	(3.34)	(2.23)
Female Unemployment Rate	7.327	7.286	7.337	-0.050
	(1.70)	(1.82)	(1.67)	(-0.80)
Male Unemployment Rate	7.731	8.115	7.644	0.472***
	(1.81)	(1.82)	(1.80)	(7.14)

Table 2: OLS Results in a Sample of Close Elections

The table reports regression results where the outcome variable is the change in the number of women directors on boards of S&P 1500 firms headquartered in zip codes covered by our sample of elections. The sample of elections consists of House, Senate, and gubernatorial elections where a non-incumbent woman runs against a male candidate over the 2004 to 2016 time period. *Woman Win* is an indicator variable that takes the value of one if the woman candidate wins the election. *Post* takes the value of one (zero) for the year after (of) the election. Covariates include firm and county characteristics. Firm characteristics are Lagfdir, Log (Total Assets), IO, and ROA. County characteristics are Log (PI), Log (Pop), Pct. of Women, Female Male Income Ratio, Female Labor Force Participation, Male Labor Force Participation, Female Unemployment Rate, and Male Unemployment Rate. All covariates are lagged. The specification also includes industry and year fixed effects. Panel A (B) includes firm-year observations where *Woman Win Margin* is less than or equal to 5% (10%). *Woman Win Margin* is the fraction of votes obtained by the woman candidate minus the fraction obtained by the male candidate. Standard errors are clustered at state level, and T statistics are reported in parentheses below. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

	Outcome Variable: Change in Number of Female Directors			
	Panel A: 5% Win Margin		**Panel B: 10% Win Margin**	
Column Number	1	2	3	4
Woman Win	-0.014	-0.007	-0.017	-0.020
	(-0.26)	(-0.17)	(-0.40)	(-0.54)
Woman Win * Post	0.147**	0.144**	0.131**	0.130**
	(2.21)	(2.30)	(2.17)	(2.24)
Post	0.050*	0.062*	-0.056	-0.041
	(1.74)	(1.91)	(-0.56)	(-0.45)
Intercept	-0.514***	-0.716	0.100	0.132
	(-21.10)	(-0.36)	(1.09)	(0.08)
R^2	0.10	0.17	0.07	0.13
Clustering of errors (State)	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes
Number of observations	779	779	1389	1389

Table 3: Placebo OLS Results with Different Winning Cutoffs

The table reports regression results where the outcome variable is the change in the number of women directors on boards of S&P 1500 firms headquartered in zip codes covered by our sample of elections. The sample of elections consists of House, Senate, and gubernatorial elections where a non-incumbent woman runs against a male candidate over the 2004 to 2016 time period. *Woman Win Margin* is the fraction of votes obtained by the woman candidate minus the fraction obtained by the male candidate. *Woman Win Placebo* is an indicator that takes the value of one if *Woman Win Margin* is greater than an arbitrary cutoff, which is set at -10% (Column 1), + 10% (Column 2), -20% (Column 3), and + 20% (Column 4). *Post* takes the value of one (zero) for the year after (of) the election. The sample consists of elections within a 10% margin of the arbitrary cutoff. Covariates include firm and county characteristics. Firm characteristics are Lagfdir, Log (Total Assets), IO, and ROA. County characteristics are Log (PI), Log (Pop), Pct. of Women, Female Male Income Ratio, Female Labor Force Participation, Male Labor Force Participation, Female Unemployment Rate, and Male Unemployment Rate. All covariates are lagged. Specifications also include industry and year fixed effects. Standard errors are clustered at the state level, and T statistics are reported in parentheses below. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

	Outcome Variable: Change in Number of Female Directors			
	Woman Win Margin Cutoff			
	-10%	+10%	-20%	+20%
Column Number	1	2	3	4
Woman Win Placebo	-0.048	0.089	0.031	0.046
	(-1.27)	(1.45)	(0.93)	(0.21)
Woman Win Placebo * Post	0.022	-0.145*	-0.050	0.046
	(0.55)	(-1.77)	(-1.00)	(0.43)
Post	-0.049	0.127	-0.027	0.020
	(-0.58)	(1.28)	(-0.32)	(0.21)
Intercept	2.537*	-0.560	2.965***	8.064
	(1.75)	(-0.33)	(2.79)	(0.71)
R^2	0.12	0.18	0.11	0.28
Clustering of errors (State)	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes
Number of observations	2104	682	2118	285

Table 4: Women's Electoral Wins and Number of Female Directors

The table reports regression results where the outcome variable is the change in the number of women directors on boards of S&P 1500 firms headquartered in zip codes covered by our sample of elections, measured in the year after the election. The sample of elections consists of House, Senate, and gubernatorial elections where a non-incumbent woman runs against a male candidate over the 2004 to 2016 time period. *Woman Win* is an indicator variable that takes the value of one if the woman candidate wins the election. Columns 1 and 2 are OLS and RD specifications using the entire sample. Columns 3 and 4 are RD specifications with and without covariates using a linear local polynomial function and sample restricted to the optimal determined bandwidth (specified in the row below). Columns 5-9 are alternate RD specifications, with details in each column. Covariates include firm and county characteristics. Firm characteristics are Lagfdir, Log (Total Assets), IO, and ROA. County characteristics are Log (PI), Log (Pop), Pct. of Women, Female Male Income Ratio, Female Labor Force Participation, Male Labor Force Participation, Female Unemployment Rate, and Male Unemployment Rate. All covariates are lagged. T statistics based on standard errors clustered at the state level are in parentheses below. The number of observations captures the observations included in the estimation. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

	Outcome Variable: Change in the Number of Female Directors After Elections (Post = 1)								
Regression Function	None (OLS)	Linear	Linear	Linear	Linear	Linear	Linear	Quadratic	Cubic
Bandwidth	Global	Global	h	h	h/2	2h	H	h	h
Column Number	1	2	3	4	5	6	7	8	9
Woman Win	0.044	0.130***	0.246**	0.228***	0.435***	0.149***	0.205***	0.441***	0.453***
	(1.36)	(2.95)	(2.58)	(3.64)	(7.62)	(3.25)	(3.64)	(5.54)	(7.26)
Bandwidth (h)	1.000	1.000	0.094	0.094	0.0472	0.189	0.094	0.094	0.094
Clustering of Error (State)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Kernel	None	Triangular	Triangular	Triangular	Triangular	Triangular	Uniform	Triangular	Triangular
Number of Observations	2441	2441	673	673	379	1358	673	673	673

Table 5A: Placebo Tests for the Year Prior to the Election

The table reports regression results where the outcome variable is the change in the number of women directors on boards of S&P 1500 firms headquartered in zip codes covered by our sample of elections, measured in the year prior to the election. The sample of elections consists of House, Senate, and gubernatorial elections where a non-incumbent woman runs against a male candidate over the 2004 to 2016 time period. *Woman Win* is an indicator variable that takes the value of one if the woman candidate wins the election. Columns 1 and 2 are OLS and RD specifications using the entire sample. Columns 3 and 4 are RD specifications with and without covariates using a linear local polynomial function and sample restricted to the optimal determined bandwidth (specified in the row below). Columns 5-9 are alternate RD specifications with details in each column. Covariates include firm and county characteristics. Firm characteristics are Lagfdir, Log (Total Assets), IO, and ROA. County characteristics are Log (PI), Log (Pop), Pct. of Women, Female Male Income Ratio, Female Labor Force Participation, Male Labor Force Participation, Female Unemployment Rate, and Male Unemployment Rate. All covariates are lagged. T statistics based on standard errors clustered at the state level are in parentheses below. The number of observations captures the observations included in the estimation. The last row reports Z values from a test for the difference between the coefficient of *Woman Win* estimated after the election (from Table 2) and the coefficient estimated before the election (from this table). ***, **, and * denote significance at the 1%, 5%, and 10% levels.

	Outcome Variable: Change in Number of Female Directors Prior to the Election (Post = 0)								
Regression Function	None (OLS)	None	Linear	Linear	Linear	Linear	Linear	Quadratic	Cubic
Bandwidth	Global	Global	h	h	h/2	2h	H	h	h
Column Number	1	2	3	4	5	6	7	8	9
Woman Win	-0.022	0.024	-0.043	0.011	0.069	0.029	0.014	0.054	0.137
	(-0.94)	(0.45)	(-0.70)	(0.24)	(1.03)	(0.55)	(0.21)	(1.09)	(1.12)
Bandwidth (h)	1.000	1.000	0.121	0.121	0.06	0.242	0.121	0.121	0.121
Clustering of errors (State)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Kernel	None	Triangular	Triangular	Triangular	Triangular	Triangular	Uniform	Triangular	Triangular
Number of Observations	2462	2462	828	828	474	1759	828	828	828
Diff. between Post = 1 and Post = 0 (Z score)	1.65	1.52	2.55***	2.76***	4.14***	1.71*	2.17**	4.14***	2.32**

Table 5B: Placebo Tests for Different Winning Cutoffs

The table reports regression results where the outcome variable is the change in the number of women directors on boards of S&P 1500 firms headquartered in zip codes covered by our sample of elections. The sample of elections consists of House, Senate, and gubernatorial elections where a non-incumbent woman runs against a male candidate over the 2004 to 2016 time period. *Woman Win Margin* is the fraction of votes obtained by the woman candidate minus the fraction obtained by the male candidate. *Woman Win Placebo* is an indicator that takes the value of one if *Woman Win Margin* is greater than an arbitrary cutoff, which is set at -10% or 10%. Panel A (B) comprises years where *Post* takes the value of one (zero). *Post* takes the value of one for the year after the election and zero otherwise. The table displays results for a bandwidth of 10%—that is, elections within a 10% margin of the arbitrary cutoff. Covariates include firm and county characteristics. Firm characteristics are Lagfdir, Log (Total Assets), IO, and ROA. County characteristics are Log (PI), Log (Pop), Pct. of Women, Female Male Income ratio, Female Labor Force Participation, Male Labor Force Participation, Female Unemployment Rate, and Male Unemployment Rate. All covariates are lagged. Specifications also include industry and year fixed effects. Standard errors are clustered at state level, and T statistics are reported in parentheses below. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

	Outcome Variable: Change in Number of Female Directors			
	Panel A: Post = 1		**Panel B: Post = 0**	
Cutoff for Winning	-10%	+ 10%	-10%	+10%
Regression Function	Linear	Linear	Linear	Linear
Bandwidth	h	H	h	h
Column Numbers	1	2	3	4
Woman Win Placebo	0.001	0.048	0.093	-0.005
	(0.01)	(0.46)	(1.23)	(-0.09)
Bandwidth (h)	0.100	0.100	0.100	0.100
Clustering of Errors (State)	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes
Kernel	Triangular	Triangular	Triangular	Triangular
Number of observations	1048	342	1056	340
Diff. Between Post = 1 and Post= 0 (Z score)	-0.87*	0.45		

Table 6: Check for Discontinuity in Covariates

The table reports RD estimates with local linear approximation, triangular kernel, and optimally determined bandwidth, the base specification, for S&P 1500 firms headquartered in zip codes covered by our sample elections. The sample elections consist of House, Senate, and gubernatorial elections where a non-incumbent woman was running against a male candidate over the period 2004 to 2016. *Woman Win* is an indicator variable that takes the value of one when the woman wins the election. The outcome variables are the covariates used in Table 2 and are measured prior to the period over which change in women directors is measured. Log (Assets) is the log of total assets. IO is the fraction of the firm owned by institutional shareholders, ROA is return on assets, Lagfdir is the lagged number of female directors on the board, Log (PI) is the log of the per capital personal income, Log (Pop) is the log of total population, Pct Women is the proportion of women at the county level, Female (Male) labor force participation is fraction of working age women (men) in the labor force, and Female (male) unemployment rate is the percentage of the female (male) labor force that is unemployed. Number of observations are those used in the estimation given the estimated optimal bandwidth. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

	LOG (Asset)	IO	ROA	LAGF DIR	Log (PI)	Log (POP)	PCT Women	Female Male Income Ratio	Female Labor Force	Female Unemploy. Rate	Male Labor Force	Male Unemploy. Rate
Column Num	1	2	3	4	5	6	7	8	9	10	11	12
Woman Win	-0.348	-0.044	0.016	-0.277	-0.315**	-0.262	-0.004	-0.023	-1.383	0.524	0.797	0.264
	(-1.48)	(-0.77)	(1.37)	(-1.54)	(-2.18)	(-0.72)	(-0.80)	(-1.17)	(-1.17)	(0.80)	(0.81)	(0.42)
Bandwidth (h)	0.140	0.073	0.140	0.121	0.109	0.116	0.143	0.085	0.111	0.138	0.134	0.153
Cluster (State)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	No	No	No	No	No	No	No	No	No	No	No	No
Kernel	Tri.	Tri.	Tri.	Tri.	Tri.	Tri.	Tri.	Tri.	Tri.	Tri.	Tri.	Tri.
Num. of Obs.	1098	500	1098	819	769	769	1099	619	769	1096	1052	1202

Table 7: Alternate RD Specifications

The table reports the estimated coefficient of *Woman Win* in RD estimations with different bandwidths and polynomial functions. *Woman Win* takes the value of one if the woman candidate wins the election. The outcome variable is the change in the number of women directors for S&P 1500 firms in zip codes covered by our sample of elections. The sample consists of House, Senate, and gubernatorial elections where a non-incumbent woman runs against a male candidate over 2004 to 2016. All specifications include covariates, year and industry fixed effects, and state-level clustering of errors, as specified in Table 2. The number of observations captures the observations included in the estimation. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

	Bandwidth				
	1	0.5	0.25	0.1	0.05
Panel A: For the Year after the elections (Post = 1)					
None (OLS)	0.044	0.044	0.047	0.099**	0.119**
	(1.36)	(1.32)	(1.29)	(2.07)	(2.07)
Linear	0.130***	0.144***	0.172***	0.309***	0.419***
	(2.95)	(2.81)	(3.29)	(5.63)	(10.44)
Quadratic	0.152***	0.187***	0.240***	0.437***	0.533***
	(2.66)	(3.15)	(3.45)	(6.60)	(15.72)
Cubic	0.206***	0.260***	0.319***	0.405***	0.601***
	(3.08)	(3.96) ***	(3.97)	(7.36)	(18.65)
Quartic	0.254***	0.279***	0.344***	0.389***	0.719***
	(3.51)	(3.82)	(5.01)	(7.35)	(15.28)
Number of Observations	2441	2317	1787	696	392
Panel B: For the Year prior to the election (Post = 0)					
None	-0.022	-0.027	-0.028	-0.007	0.009
	(-0.94)	(-1.10)	(-1.01)	(-0.18)	(0.17)
Linear	0.024	0.024	-0.014	0.044	0.069***
	(0.45)	(0.40)	(-0.29)	(0.62)	(2.69)
Quadratic	0.025	-0.026	-0.030	0.092	0.041
	(0.40)	(-0.43)	(-0.59)	(1.34)	(1.34)
Cubic	-0.032	-0.068	-0.055	0.068**	0.055**
	(-0.47)	(-1.20)	(-0.71)	(2.38)	(2.02)
Quartic	-0.076	-0.056	-0.032	0.010	0.139**
	(-1.19)	(-0.93)	(-0.29)	(0.21)	(2.08)
Number of Observations	2462	2338	1804	693	387
Panel C: Z scores (Panel A – Panel B)					
None	1.65*	1.71*	1.64	1.69*	1.43
Linear	1.52	1.51	2.59***	2.96***	7.32***
Quadratic	1.48	2.50**	3.13***	3.61***	10.76***
Cubic	2.50**	3.78***	3.36***	5.43***	13.00***
Quartic	3.42***	3.53***	2.90***	5.30***	7.08***

Table 8: Robustness Tests

The table reports regression results where the outcome variable is the change in the number of women directors on boards of S&P 1500 firms headquartered in zip codes covered by our sample of elections, measured in the year after the election. The sample of elections consists of House, Senate, and gubernatorial elections where a non-incumbent woman runs against a male candidate over the 2004 to 2016 time period. *Woman Win* takes the value of one if the woman candidate wins the election. Covariates included are firm (IO, ROA, Lagfdir, and Log (Total Assets)) and county characteristics (Log (PI), Log (Pop), Pct. of Women, Female Male Income ratio, Female Labor Force Participation, Male Labor Force Participation, Female Unemployment Rate, and Male Unemployment Rate) that are lagged. *Post* is one for the year after the election and zero otherwise. T statistics are based on standard errors clustered at the state level. The estimation used a linear regression function and a triangular kernel. The number of observations captures the observations included in the estimation. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Table 8A: Public Attention to Gender equity

Panel A includes *Gender Equality SVI (State)*, the state level Google Search index on gender equality. Panel B includes *Gender Equality SVI*, the Google Search Index for the US on gender equality, as a covariate.

	Panel A: SVI (State)		**Panel B: SVI**	
	Post = 1	Post = 0	Post = 1	Post = 0
Woman Win	0.245***	-0.026	0.228***	0.011
	(4.45)	(-0.44)	(3.64)	(0.24)
Bandwidth (h)	0.094	0.121	0.094	0.094
Industry, Year Fixed Effects	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes
Gender Equality SVI (State)	Yes	Yes	No	No
Gender Equality SVI	No	No	Yes	Yes
Number of Observations	665	818	673	828
Z score (Post = 1 - Post= 0)	3.39***		2.76***	

Table 8B: Presidential Election Cycle

Panel A (B) includes sample elections that are (not) part of the presidential election cycles of 2004, 2008, 2012, and 2016.

	Panel A: Presidential Cycle		**Panel B: Non-Presidential Cycle**	
	Post = 1	Post = 0	Post = 1	Post = 0
Woman Win	0.209***	0.075	0.249***	-0.143
	(2.75)	(1.31)	(2.12)	(-1.61)
Bandwidth (h)	0.094	0.121	0.094	0.121
Industry Fixed Effects	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes
Number of Observations	346	374	327	454
Z score (Post = 1 - Post= 0)	1.42		2.66***	

Table 8C: Alternate Measures of Board Diversity

The outcome variable is the change in the fraction of female directors. Panel A (B) includes all (only independent) directors in calculating the fraction of female directors.

	Outcome Variable: Change in the Fraction of Female Directors			
	Panel A: All Directors		**Panel B: Independent Directors**	
	Post = 1	Post = 0	Post = 1	Post = 0
Woman Win	0.021***	0.004	0.025***	-0.002
	(3.70)	(0.89)	(4.27)	(-0.35)
Bandwidth (h)	0.094	0.121	0.094	0.121
Ind, Year FE and Covariates	Yes	Yes	Yes	Yes
Number of Observations	673	828	673	828
Z score (Post = 1 - Post= 0)	2.38**		3.57***	

Table 8D: Female Directors on Board Committees

The outcome variable in Panel A (B) is the change in the number (fraction) of women directors on audit and compensation committees of S&P 1500 firms headquartered in zip codes covered by our sample of elections.

	Panel A: Change in number of Female Director		**Panel B: Change in fraction of female directors**	
	Post = 1	Post = 0	Post = 1	Post = 0
Woman Win	0.142***	0.043	0.015***	0.006
	(3.13)	(1.07)	(3.81)	(1.47)
Bandwidth (h)	0.085	0.099	0.086	0.103
Ind, Year FE and Covariates	Yes	Yes	Yes	Yes
Number of Observations	619	693	619	694
Z score (Post = 1 - Post= 0)	1.65		1.67*	

Table 8E: Political Affiliation of County

A county is classified as Democratic (Republican) if it voted for a Democrat (Republican) candidate in the previous two presidential elections.

	Outcome Variable: Change in Number of Female Directors			
	Panel A: Democratic County		**Panel B: Republican County**	
	Post = 1	Post = 0	Post = 1	Post = 0
Woman Win	0.328***	-0.066	0.577***	0.161**
	(5.67)	(-1.10)	(8.02)	(2.32)
Bandwidth (h)	0.094	0.121	0.094	0.121
Ind, Year FE and Covariates	Yes	Yes	Yes	Yes
Number of Observations	472	556	126	184
Z score (Post = 1 - Post= 0)	4.72***		4.16***	
Republican – Democratic (Z)	2.7***	2.47***		

Table 9: Election Salience: Heterogenous RD Treatment Effects

The table reports regression results for a sample of S&P 1500 firms headquartered in zip codes that are covered by our sample of House, Senate, and gubernatorial elections where a non-incumbent woman runs against a male candidate from 2004 to 2016. The outcome variable is the change in the number of female directors. *Woman Win* is an indicator variable that takes the value of one if the woman candidate wins the election. *Post* takes the value of one (zero) if the year is after (of) the election. The table reports RD estimates with local linear approximation and a triangular kernel. Covariates are industry and year fixed effects, along with firm and county characteristics. Firm characteristics include Lagfdir, Log(assets), IO, and ROA. County characteristics include Log(PI), Log(Pop), Pct. Women, Female male income ratio, Female labor force, male labor force, female unemployment rate, and male unemployment rate. The number of observations captures the observations included in the estimation. T statistics based on standard errors clustered at the state level are in parentheses below. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Panel A: Senate/Gubernatorial Versus House Elections

Senate/Gov (House) includes firms in districts where a non-incumbent woman candidate runs against a male candidate in Senate or gubernatorial (House) elections only.

Outcome Variable: Change in the Number of Female Directors				
	Post = 1		**Post = 0**	
	Senate/Gov	**House**	**Senate/Gov**	**House**
Woman Win	0.806***	0.276***	-0.026	0.005
	(11.46)	(3.51)	(-1.11)	(0.06)
Bandwidth (h)	0.048	0.079	0.06	0.106
Ind, Year FE and Covariates	Yes	Yes	Yes	Yes
Number of Observations	270	144	272	201
Diff. between Senate and House (Z score)	5.02***		-0.39	
Z score (Post = 1 - Post= 0)	11.21***	2.48**		

Panel B: Media Coverage

The *High* (*Low*) group consists of elections where the media coverage of the woman candidate is above (below) the median value in the sample of close House elections within the 0.10 bandwidth. Media coverage is the number of articles that mention the woman candidate from six months before to six months after the election. All Senate and gubernatorial elections are included in the *High* group.

Outcome Variable: Change in the Number of Female Directors				
	Post = 1		Post = 0	
	High	Low	High	Low
Woman Win	0.250***	0.073	0.049	0.185*
	(4.61)	(1.00)	(0.76)	(1.79)
Bandwidth (h)	0.10	0.10	0.10	0.10
Ind, Year FE and Covariates	Yes	Yes	Yes	Yes
Number of Observations	592	104	586	107
Diff. between High and Low (Z score)	1.93*		-1.12	
Z score (Post = 1 - Post= 0)	2.40**	-0.88		

Panel C: Local Voter Turnout

Local voter turnout is the fraction of registered voters that vote in the county where the firm is headquartered. The *High* (*Low*) group consists of firms located in counties that had an above (below) median local voter turnout in a sample of close elections within the 0.10 bandwidth.

Outcome Variable: Change in the Number of Female Directors				
	Post = 1		Post = 0	
	High	Low	High	Low
Woman Win	0.267***	0.061	0.058	0.156
	(6.42)	(0.66)	(0.66)	(1.47)
Bandwidth (h)	0.10	0.10	0.10	0.10
Ind, Year FE and Covariates	Yes	Yes	Yes	Yes
Number of Observations	338	339	345	343
Diff. between High and Low (Z score)	2.01**		-0.71	
Z score (Post = 1 - Post= 0)	2.13**	-0.67		

Table 10: Firm Responsiveness to Local Changes: Heterogenous RD Treatment Effects

The table reports regression results for a sample of S&P 1500 firms headquartered in zip codes covered by our sample of House, Senate, and gubernatorial elections where a non-incumbent woman runs against a male candidate from 2004 to 2016. The outcome variable is the change in the number of female directors. *Woman Win* is an indicator variable that takes the value of one if the woman candidate wins the election. *Post* takes the value of one (zero) if the year is the one after (of) the election. The table reports RD estimates with local linear approximation, a 10 percent bandwidth, and a triangular kernel. Covariates included are industry and year fixed effects along with Lagfdir, Log(assets), IO and ROA, Log(PI), Log(Pop), Pct. Women, Female Male Income Ratio, Female Labor Force, Male Labor Force, Female Unemployment Rate, and Male Unemployment Rate. The number of observations captures the observations included in the estimation. T statistics based on standard errors clustered at the state level are in parentheses below. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Panel A: Proportion of Local Directors

Proportion of local directors is the fraction of the board that resides locally—that is, within 50 miles of the firm's headquarters. Firms are classified into the *High* (*Low*) group if the proportion of local directors is above (below) the median in a sample of close elections within a 0.10 bandwidth

Outcome Variable: Change in the Number of Female Directors				
	Post = 1		**Post = 0**	
	High	**Low**	**High**	**Low**
Woman Win	0.473***	0.206**	0.146*	-0.022
	(7.77)	(2.55)	(1.74)	(-0.21)
Bandwidth (h)	0.10	0.10	0.10	0.10
Ind, Year FE and Covariates	Yes	Yes	Yes	Yes
Number of Observations	255	241	273	250
Diff. between High and Low (Z score)	2.64***		1.27	
Z score (Post = 1 - Post= 0)	3.16***	1.75*		

Panel B: Ownership by Local Institutional Investors

Ownership by local institutional investors is the fractional ownership of local institutional investors. An institutional investor is classified as local if it is located within 50 miles of the firm's headquarters. Firms are classified into the *High* (*Low*) group if the number of local institutional investors is above (below) the median in a sample of close elections within a 0.10 bandwidth.

Outcome Variable: Change in the Number of Female Directors				
	Post = 1		**Post = 0**	
	High	**Low**	**High**	**Low**
Woman Win	0.431***	0.136***	0.226**	-0.048
	(6.55)	(2.64)	(2.43)	(-0.94)
Bandwidth (h)	0.10	0.10	0.10	0.10
Ind, Year FE and Covariates	Yes	Yes	Yes	Yes
Number of Observations	323	344	324	351
Diff. between High and Low (Z score)	3.53***		2.58***	
Z score (Post = 1 - Post= 0)	1.81*	2.53**		

Panel C: ISS Recommendations and Board Responsiveness

(No) Negative ISS consists of firms where at least one (no) member of the board had a negative ISS recommendation. The estimation was for elections within a 0.10 bandwidth.

	Outcome Variable: Change in the Number of Female Directors			
	Post = 1		**Post = 0**	
	Negative ISS	**No Negative ISS**	**Negative ISS**	**No Negative ISS**
Woman Win	0.5254***	0.1807***	0.3218***	-0.1244
	(14.84)	(3.73)	(6.42)	(-1.64)
Bandwidth (h)	0.10	0.10	0.10	0.10
Ind, Year FE and Covariates	Yes	Yes	Yes	Yes
Number of Observations	92	513	117	482
Diff. between Negative and No Negative ISS (Z score)	5.74***		4.90***	
Z score (Post = 1 - Post= 0)	3.32***	3.39***		

Panel D: Gender-Related Shareholder Proposals

The outcome variable is the fraction of shareholder proposals that are gender-related. The table reports RD estimates with local linear approximation, an optimally chosen bandwidth, and a triangular kernel.

	Outcome Variable: Fraction of Gender-Related Shareholder Proposals	
	Post = 1	**Post = 0**
Woman Win	0.007**	-0.002
	(1.97)	(-0.70)
Bandwidth (h)	0.062	0.068
Ind, Year FE and Covariates	Yes	Yes
Number of Observations	486	481
Z score (Post = 1 - Post= 0)	2.02**	

Table 11: Change in Gender Norms

The table reports OLS estimates where the dependent variable is the change in gender norms. In Panel B (C) [D], the dependent variable is change in the response to the question referred to as *fepresch* (*fechld*) [*fefam*] for the state, and the observations are at the state election level. *Fepresch* asks, "A preschool child is likely to suffer if his or her mother works." *Fechld* asks, "A working mother can establish just as warm and secure a relationship with her children as a mother who does not work." *Fefam* asks, "It is much better for everyone involved if the man is the achiever outside the home and the women takes care of the home and family." Post = 1 (0) captures the years after (before) the election. The sample consists of gubernatorial and Senate elections where a non-incumbent woman runs against a male candidate from 1990 to 2008. An election was included only if there was data to calculate a change in the gender norm for both Post = 1 and Post = 0. *Woman Win* is a dummy variable that takes the value of one if the woman candidate wins the election. T statistics are reported in parentheses below. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Dependent Variable	**Panel A: Change in Overall Response**		**Panel B: Change in *fepresch* Response**		**Panel C: Change in *fechld* Response**		**Panel D: Change in *fefam* Response**	
	Post =1	Post = 0	Post =1	Post = 0	Post =1	Post = 0	Post =1	Post = 0
Intercept	-0.057	0.027	-0.067	0.029	-0.059	0.011	-0.047	0.042
	(-1.34)	(0.86)	(-1.47)	(0.83)	(-1.27)	(0.28)	(-0.84)	(0.94)
Woman Win	0.108*	-0.054	0.184**	-0.040	0.099	-0.039	0.039	-0.082
	(1.69)	(-0.99)	(2.40)	(-0.68)	(1.37)	(-0.63)	(0.47)	(-1.00)
Number of Observations	46	46	46	46	46	46	46	46
Rsquare (%)	5.9	2.3	12.0	1.1	4.1	0.9	0.5	2.4
Z score (Post = 1 - Post= 0)	1.93*		2.32**		1.45		1.07	

Appendix Table 1: Wins by Incumbent Women Candidates

The table reports regression results where the outcome variable is the change in the number of women directors on the boards of S&P 1500 firms headquartered in zip codes covered by our sample of elections. The sample of elections consists of House, Senate, and gubernatorial elections where an incumbent woman runs against a male candidate over the 2004 to 2016 time period. We exclude nonincumbent women that run and win but include them if they lose, as we have very few observations where incumbent women lose. *Incumbent Woman Win* is an indicator variable that takes the value of one if an incumbent woman candidate wins the election. *Post* takes the value of one (zero) for the year after (of) the election. Covariates include firm and county characteristics. Firm characteristics are Lagfdir, Log (Total Assets), IO, and ROA. County characteristics are Log (PI), Log (Pop), Pct. of Women, Female Male Income ratio, Female Labor Force Participation, Male Labor Force Participation, Female Unemployment Rate, and Male Unemployment Rate. All covariates are lagged. The specification also includes industry and year fixed effects. *Woman Win Margin* is the fraction of votes obtained by the woman candidate minus the fraction obtained by the male candidate. Standard errors are clustered at the state level, and T statistics are reported in parentheses below. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Appendix Table 1A: Results from OLS Regression

The table reports results from an OLS regression of close elections. Panel A (B) includes firm-year observations where *Woman Win Margin* is within 5% (10%).

	Outcome Variable: Change in the Number of Female Directors			
	Panel A: Win Margin <=5%		**Panel B: Win Margin <=10%**	
Column Number	1	2	3	4
Incumbent Woman Win	0.050	0.056	0.059**	0.073**
	(1.49)	(1.35)	(2.31)	(2.07)
Incumbent Woman Win x Post	-0.027	-0.020	-0.047	-0.044
	(-0.54)	(-0.42)	(-0.80)	(-0.75)
Post	0.048	0.045	-0.037	-0.025
	(1.54)	(1.76)	(-0.38)	(-0.28)
Intercept	-0.504	1.082	-0.427	1.752
	(-14.54)	(0.64)	(-3.95)	(1.06)
R^2	0.06	0.13	0.08	0.15
Clustering of errors (State)	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Covariates	No	Yes	No	Yes
Number of observations	636	636	974	974

Appendix Table 1B: Results from OLS Regression

The table reports results from an RD estimation. Panel A (B) includes firm-year observations for Post equal to one (zero)—that is, for years after (of) the election.

	Outcome Variable: Change in the Number of Female Directors			
	Panel A: Post = 1		**Panel B: Post = 0**	
Regression Function	Linear	Linear	Linear	Linear
Bandwidth	h	h	h	h
Column Numbers	1	2	3	4
Incumbent Woman Win	-0.072	-0.244	-0.056	-0.122
	(-0.25)	(-0.79)	(-0.19)	(-0.46)
Bandwidth (h)	0.100	0.100	0.100	0.100
Clustering of errors (State)	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes
Kernel	Triangular	Uniform	Triangular	Uniform
Number of observations	485	485	487	487
Z score (Post = 1 - Post= 0)	-0.04	-0.30		